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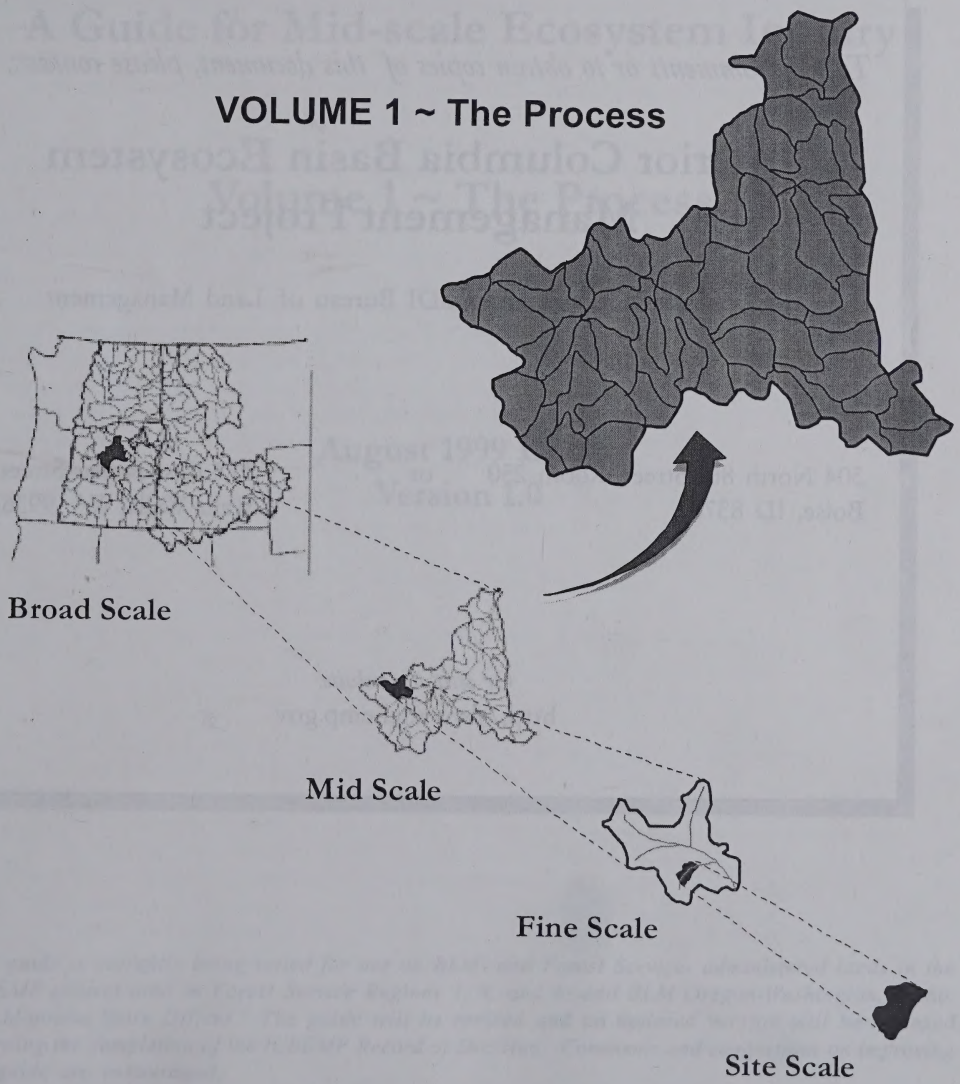
Interior Columbia Basin Ecosystem Management Project

Ecosystem Review at the Subbasin Scale

(Subbasin Review)

A Guide for Mid-scale Ecosystem Inquiry

VOLUME 1 ~ The Process



August 1999 Draft
Version 1.0

http://www.icbemp.gov/implement/subbas.shtml

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Ecosystem Review at the Subbasin Scale (Subbasin Review)

A Guide for Mid-scale Ecosystem Inquiry

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This guide is currently being tested for use on BLM- and Forest Service- administered lands in the ICBEMP project area in Forest Service Regions 1, 4, and 6; and BLM Oregon/Washington, Idaho, and Montana State Offices. The guide will be revised and an updated version will be released following the completion of the ICBEMP Record of Decision. Comments and suggestions on improving the guide are encouraged.

Acknowledgement

This guide was completed under the direction of the Executive Steering Committee of the Interior Columbia Basin Ecosystem Management Project (ICBEMP), representing: the USDA Forest Service Regions 1, 4, and 6; the USDA Forest Service Pacific Northwest and Rocky Mountain Research Stations; Bureau of Land Management, Oregon/Washington, Idaho, and Montana State Offices; U.S. Fish and Wildlife Service; U.S. Environmental Protection Agency; and National Marine Fisheries Service.

The guide was developed by two teams representing the five federal agencies. The first team developed a prototype program to test the concept of Subbasin Review, and the second team developed the guide using the information learned from the seven prototypes. The prototypes were spread throughout the interior Columbia Basin to represent the diverse ecosystems found there. The five sponsoring agencies were joined by American Indian tribes and state and local governments in the prototype subbasins to conduct the prototype reviews.

The agencies and governments contributing to the development of this guide through the prototype program include: Natural Resources Conservation Service, Malheur County Extension, Malheur County Soil and Water Conservation District, Malheur County, Malheur–Owyhee Watershed Council, Oregon Department of Fish and Wildlife, Oregon Department of Environmental Quality, Burns Paiute Tribe, Nez Perce Tribe, Idaho Department of Fish and Game, Idaho Department of Environmental Quality, Shoshone–Bannock Tribe, Custer County Extension, Granite County, Granite County Extension, Missoula and Granite Conservation Weed District, Missoula County, Missoula County Extension, Missoula Office of Planning and Grants, Montana Department of Fish/Wildlife and Parks, Montana Department of Environmental Quality, Montana Department of Natural Resource Conservation, Montana Department of Resource Conservation and Development, Confederated Salish and Kootenai Tribes, Washington Department of Fish and Wildlife, Wallowa County, Tri-county Weed Management Association, Crook County, Crook County Soil and Water Conservation District, Oregon Parks and Recreation Department, Crook County Extension, Oregon Department of Water Resources, Confederated Tribes of Warm Springs, Bureau of Indian Affairs, Bureau of Reclamation, Oregon Department of Agriculture, Ochoco Irrigation District, Oregon Department of Geology and Mineral Industries, Crook County Watershed Council, and Oregon Department of Forestry.

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VOLUME 2 **(Available on the Internet at www.icbemp.gov)**

Examples of Mid-scale Displays (Maps, Graphics, and Tables) Useful at the Subbasin Scale

(NOTE: Due to its length and preponderance of color maps, Volume 2 was created as an Internet product for use by field teams conducting subbasin reviews.)

Overview

The essential variables are these: (1) simplicity of presentation, (2) visibility of presentation, (3) everyone's involvement, (4) undistorted collection of primary information..., (5) the straight forward measurement of what's important, (6) achievement of an overall urgency and perpetual improvement.

—Tom Peters, Thriving on Chaos

Introduction

Ecosystem Review at the Subbasin Scale (Subbasin Review) is one step in a hierarchical assessment process that applies broad-scale science findings and decisions to finer-scale areas by understanding ecosystem status (the condition of the ecosystem relative to historical conditions), risks to its status from natural events and management actions, and opportunities to conserve and restore the ecosystem. The goal is to consistently and effectively manage risks to the ecosystem and capitalize on opportunities to conserve and restore them.

No single assessment can adequately address the complex issues facing resource managers today. Fine-scale assessments provide necessary context for management and project planning, but they cannot adequately address broad patterns and processes, such as habitat conditions for wide-ranging species. Broad-scale assessments provide necessary context for policy formulation and for mid- and fine-scale assessments but cannot, by themselves, provide detailed information, such as site-specific habitat conditions. Together, multiple-scaled assessments provide a comprehensive basis for sustainable land management.

Four geographic levels of review/ assessments are intended to provide the context to appropriately implement broad-scale decisions on individual national forests and BLM districts. They include:

- *Broad-scale* (such as *Assessment of Ecosystem Components in the Interior Columbia Basin*)
- *Mid-scale* (Ecosystem Review at the Subbasin Scale);
- *Fine-scale* (Ecosystem Analysis at the Watershed Scale);
- *Site-scale* (project/site analysis, including NEPA analysis).

This guide provides advice on how to conduct a mid-scale review. The mid-scale review is the first step down from the broad-scale in the hierarchical approach of understanding ecosystem processes and functions. Information developed through mid-scale review provides beneficial context for locating projects that meet multiple management objectives, including reducing risks to sensitive or unique resources. The guide describes a dynamic process which can be used to update reviews as knowledge, information, and situations change through time.

Mid-scale or subbasin scale refers to 4th-field Hydrologic Unit Codes (HUC) (500,000 to 1,000,000 acres, approximately) or groups of 4th-field HUCs. The *Assessment of Ecosystem Components in the Interior Columbia Basin* (Quigley and Arbelbide 1997) found that the mid-scale is important for addressing management of ecosystem components because many important relationships and patterns are evident only at this scale. Ecosystem Review at the Subbasin Scale (Subbasin Review) is a mid-scale look at ecosystem processes and functions to bridge the gap between broad-scale information and decisions (such as that in the ICBEMP), and finer-scale Ecosystem Analysis at the Watershed Scale (10,000 to 100,000 acres, approximately), and actual on-the-ground management actions.

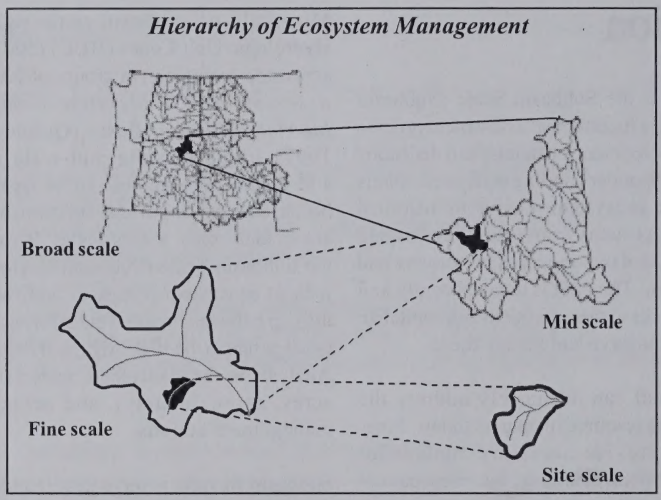
Subbasin Review is not a detailed mid-scale analysis. It is a review of mid-scale issues and a priority-setting tool to identify and prioritize where to do more detailed mid- and finer-scaled analysis if found necessary during the review. Subbasin Review also is not a decision-making process, but rather a stage-setting process. The results of Subbasin Review establish the *context* for subsequent decision-making processes, including planning, project development, and regulatory compliance. Outcomes from the review do not constitute a stand-alone planning process; rather, the review is an integrated effort that supports other existing planning and assessment processes. Subbasin Review generally is not expected to provide sufficient information by itself to support management decisions.

The review process may identify further mid-scale analysis or assessment needs, but the limited timeframes for the review may preclude exhaustive analysis during the review period. Recommendations from the review

Concept of Scaled Analysis

The ICBEMP encompasses 144 million acres, or an area roughly the size of the State of Texas. The size of this analysis area invokes the need for scaled relationships. Scale in this context refers to the spatial and temporal dimensions of an object or process, characterized by both resolution and extent of the data.

The project area has been divided for analysis and review into four spatial or geographic scales: broad-scale (interior Columbia Basin), mid-scale (subbasin or groups of subbasins), fine-scale (watershed-scale), and site-scale (project).



In reality, scales are continuous, much like looking through a camera lens while you zoom in and out to frame the desired subject. However, humans use distinct pictures or maps at different scales to help us achieve objectives. When you drive your car across a state, the state highway map allows you to choose the highways to travel on between cities; when you get into town, the city map helps you to understand the details of streets and block numbers to get to your hotel. In a similar way, resource management conditions, issues, and decisions can be defined and illustrated at different geographic scales.

Focusing on only one scale can cause error in decisions, much like what can happen if you try to plan your route across the state using a city map or vice versa. The better our understanding of the next broader scale, the more context we have to ensure that we get to our destination, while the finer scales lead us to a better understanding of how to manage the details. Look up for context; look down for details. See Appendix G for more discussion of scale.

can point out further assessment needs important at the mid- or finer scales. Where possible, locations of these further needs should be mapped and made available for later use. It is entirely possible that the review recommendations will be constrained by lack of data. If additional data is critical to making recommendations to address issues identified in the review, management activities may need to be postponed or modified until data can be developed to address the issue.

Objectives of Subbasin Review

The objectives of ecosystem review at the subbasin scale are to:

- Assess resource status and condition, as well as risks and opportunities to reduce potential unwanted effects from management actions and land uses (for example, road-related adverse effects) and to better balance short- and long-term, and mid- and fine-scale risks;
- Provide an understanding of how the review area fits into the broad-scale ecosystem, gain an understanding of the ecosystem that is apparent only at the mid-scale, and provide context and priority for finer scale analysis;
- Provide support for other analyses and initiatives such as EAWS, roads analysis, water quality restoration plans, the Healthy Rangelands Initiative, and further mid-scale assessment needs;
- Identify risks and opportunities to meet broad-scale and mid-scale objectives through subsequent site-specific management actions;
- Identify opportunities for pooling interagency (federal agencies) and intergovernmental (tribes, states, counties, cities) resources;
- Provide information and recommendations to support land use planning, consultation, and legal requirements, such as those found in FLPMA, NFMA, treaty/trust responsibilities, Endangered Species Act (ESA), and Clean Water Act (CWA);
- Verify or provide mid-scale data where projected or unavailable from ICBEMP, and identify data gaps at the mid-scale; and
- Prioritize opportunities for ecosystem restoration, for filling social and economic needs, for further analysis, for monitoring and data collection, and for other subsequent site-specific management actions.

Subbasin Review Approach

The review process is expected to:

- Use a collaborative interagency and intergovernmental approach;
- Be a brief review (four to eight weeks of concentrated team time) extended over sufficient time to accomplish the objectives of Subbasin Review (up to six months);
- Use existing information to conduct the review and identify critical data gaps;
- Allow the complexity of the issues and availability of information to determine intensity of the review;
- Be conducted in conjunction with other types of mid-scale assessments when efficiency opportunities exist (for example, during land use planning);
- Be a dynamic process whereby risks, opportunities, and priorities are collaboratively revisited when significant new information becomes available, new issues arise, or conditions change; and
- Where available, use existing mid-scale assessments to meet Subbasin Review intent to the extent possible.

In this guide, the review is organized into five steps to help explain the process. Step 1 is a getting-ready process and step 5 is documentation phase. The three middle steps (Steps 2 through 4) are an iterative process. The identified issues (from Step 2) in combination with an understanding of the review area's character (Step 3) help teams to develop recommendations and prioritize future activities (Step 4). As new knowledge is gained in each step, it may be necessary to return to previous steps to incorporate new information before moving forward.

Figure 1 summarizes the Subbasin Review process.

Following is a summary of the five steps which are discussed in detail in the remainder of this guide:

Step 1 ~ Preparing for Review

The purpose of step one is to lay the ground work for the actual review. Since the review is conducted collaboratively with other affected federal agencies, state and local governments, and American Indian tribes, extensive preparations are needed before the review can begin.

Step 2 ~ Identifying Mid-scale Issues

The purpose of step two is to focus the review on mid-scale issues within the review area and to link the review area to the broad-scale findings and direction.

Step 3 ~ Describing the Mid-scale Character

The purpose of step three is to gain an understanding of the review area relative to the issues identified in step two. A description of mid-scale character includes a general understanding of the review area relative to features and processes occurring at the broader scale and across neighboring subbasins, as well as characterization of current conditions and trends within the review area.

Step 4 ~ Developing Integrated Priorities and Recommendations

The purpose of step four is to make recommendations for future management attention (e.g., further mid- or fine-scale analyses or project planning), to establish priorities for where to go next, and to collaboratively commit to pooling interagency and intergovernmental resources to address review area issues.

Step 5 ~ Writing the Report

The purpose of step five is to document the review process and results so the report can be used to provide background for the recommendations and priorities developed, and be used for context for finer scaled analysis.

Subbasin Review and Non-Federal Lands

The Subbasin Review recommendations are not applicable to lands not under the administration of the BLM or Forest Service; however, review teams should consider the interactions of various land ownerships within the review area. Subbasin recommendations and priorities should consider conditions and activities on or within adjacent non-federal lands that may affect recommended actions on BLM- or Forest Service-administered lands.

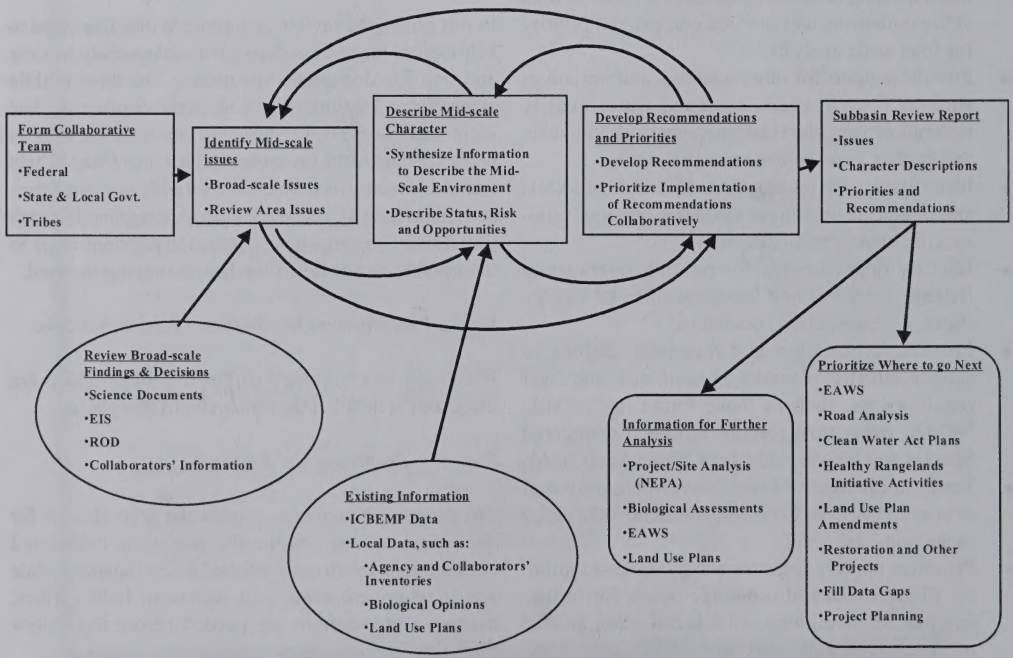


Figure 1. Subbasin Review Process.

Cooperative approaches that include public involvement are an option for Subbasin Reviews that cross jurisdictional and ownership boundaries. Review teams are encouraged to find ways to include the views of non-federal landowners in the review process. Voluntary participation by non-federal landowners will enhance the team's ability to share data, understand the interconnections of various land ownerships, and better understand the management goals across the review area. Teams must also consider the Federal Advisory Committee Act (FACA) if individuals are invited to participate (see Appendix E).

Teams should recognize that even with voluntary landowner and tribal participation, there may be concerns regarding proprietary data and public access to sensitive information. Teams should have partner agreement on making their information available to the public before it is used in Subbasin Review. Publicly available information about topography, soils, geology, hydrology, transportation systems, vegetation, and socio-economics should be accessible through federal agencies, state and local governments, and American Indian tribes.

Timeframes for Subbasin Reviews

It is expected that the Subbasin Review process will be a concentrated review of existing information that takes place in a relatively short period of time. The intent is to identify information that can be readily used to integrate mid-scale recommendations and set priorities for conservation and restoration needs. The recommendations and priorities can then be stepped down to finer scale assessments or decision processes. Within this context, the following parameters are recommended to line managers:

- Anticipate and plan for upcoming Subbasin Reviews by consolidating available data, resolving data incompatibility, creating preliminary map displays, or conducting other appropriate activities that will later allow for efficient and effective use of the limited time for conducting the reviews.
- The concentrated work time devoted to assembling and displaying review area information—as well as the development of recommendations, priority setting, and documentation of the review—should be about four to eight work weeks for core team members.
- The start-to-finish review should be maintained within a six-month time period that will allow for team members to work on other agency priorities and provide time to accommodate collaborative partners' schedules and time commitments while ensuring that organizations move toward meeting basinwide objectives and priorities within assumed critical timeframes.
- Individual specialists should develop work plans that meet the overall review timelines. Line managers should monitor progress of individuals using available scheduling tools to meet those commitments.
- Intensively monitoring the mid-scale process can keep the team focused on scale-appropriate issues and data. This effort is critical to keeping the review within timeframes. Missed deadlines are likely to occur if individual specialists drift to finer-scale data analysis or lack an understanding of how to develop subbasin-scale information.

Delineating and Scheduling Areas for Review

The review area refers to the land area being evaluated in a particular Ecosystem Review at the Subbasin Scale. It is defined collaboratively with the interagency and intergovernmental partners conducting the Subbasin Review. The review area usually is a U.S. Geological Survey 4th-field Hydrologic Unit Code (HUC) or group of 4th-field HUCs, approximately 500,000 to 5,000,000 acres in overall size. However, a particular Subbasin Review may follow an alternative to hydrologic boundaries when collaborators agree that other boundaries are more appropriate.

Agency leadership will need to concur with review area boundaries and the order in which reviews will be conducted. Higher priority areas may be indicated from the broad-scale analysis. Agencies and collaborators can use this information to determine the order in which reviews will take place. The review teams should have the flexibility to modify the review area boundaries (among and within subbasins) as appropriate during the process.

Some considerations for delineating and scheduling areas for review include the following:

- ICBEMP objectives and standards provide priorities for conducting reviews.
- Configuration of, and establishment of priorities for, reviews is an agency responsibility, done with collaborative partners prior to conducting any reviews.
- It is expected that all reviews will be done within a two- to five-year time period, with high priority areas conducted within two years.
- Where multi-subbasin key issues exist, establish logical combinations of subbasins to be reviewed; set review priorities.
- Funding and staff availability of collaborators may help determine review priorities along with other agency priorities.

Links to Plans and Other Processes

Subbasin Reviews provide information, context, and priorities for plans and other processes. Figure 2 illustrates the uses of Subbasin Review to support plans and other processes.

A variety of other analysis processes are relevant at the mid-scale. Subbasin Review should be conducted in conjunction with them when there are opportunities for efficient use of funding and personnel. Some examples are described below. Review teams should contact state, local, and tribal governments to determine

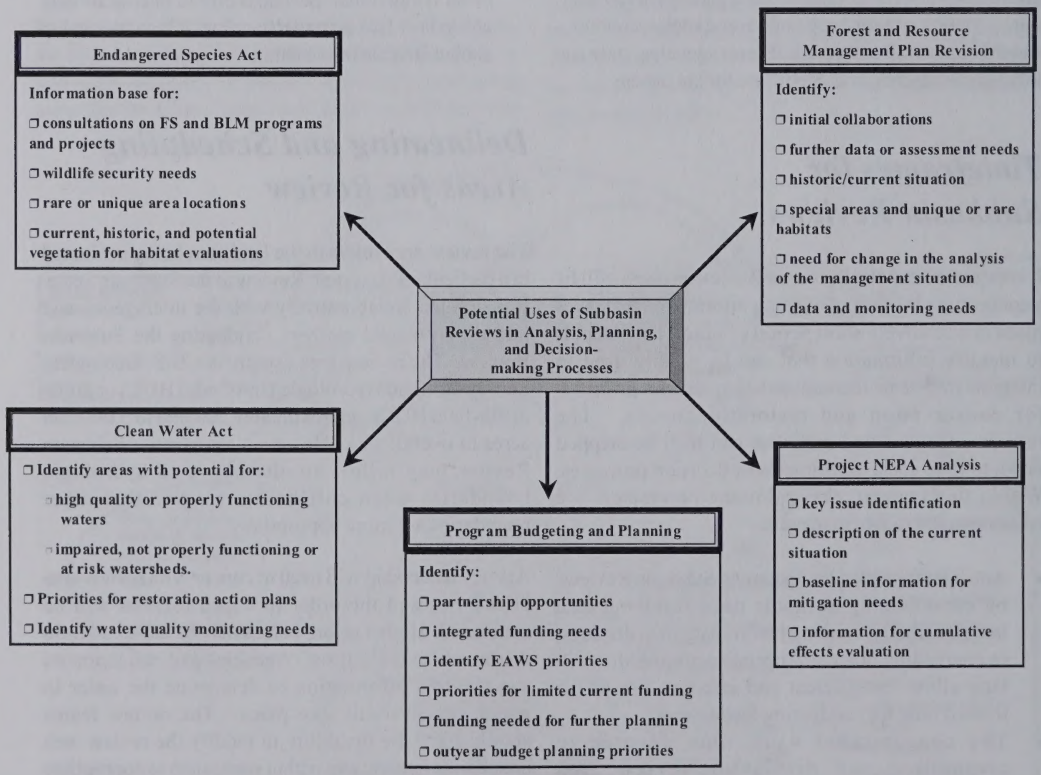

Endangered Species Act
Information base for:
❒ consultations on FS and BLM programs and projects
❒ wildlife security needs
❒ rare or unique area locations
❒ current, historic, and potential vegetation for habitat evaluations
Forest and Resource Management Plan Revision
Identify:
❒ initial collaborations
❒ further data or assessment needs
❒ historic/current situation
❒ special areas and unique or rare habitats
❒ need for change in the analysis of the management situation
❒ data and monitoring needs
Potential Uses of Subbasin Reviews in Analysis, Planning, and Decision-making Processes
Clean Water Act
❒ Identify areas with potential for:
❒ high quality or properly functioning waters
❒ impaired, not properly functioning or at risk watersheds.
❒ Priorities for restoration action plans
❒ Identify water quality monitoring needs
Program Budgeting and Planning
Identify:
❒ partnership opportunities
❒ integrated funding needs
❒ identify EAWS priorities
❒ priorities for limited current funding
❒ funding needed for further planning
❒ outyear budget planning priorities
Project NEPA Analysis
❒ key issue identification
❒ description of the current situation
❒ baseline information for mitigation needs
❒ information for cumulative effects evaluation

Figure 2. Potential Uses of Subbasin Review in Planning Processes.

if other analyses have been completed, are underway, or are planned in the review area. Review teams should strive to conduct the review in a manner consistent with this guide and compatible with other relevant analysis processes such as the ones discussed below. Teams should take advantage of opportunities for coordinated and cooperative analysis efforts among intergovernmental partners, including data sharing, developing common data sets, agreeing to common analysis methods, and defining compatible analysis boundaries.

Land Use Planning (FLPMA and NFMA)

Subbasin Review is a systematic way of gathering, organizing, and understanding ecosystem information. It may identify, even generate, a need for land use plan amendments or revisions. The information developed through the review can be used as an analysis base for these land use plan amendments or revisions. It is not, in itself, a decision-making process. Rather, it provides the information necessary to make well-informed decisions. Subbasin Review can be linked to Forest Service Forest Plans and BLM Resource Management Plans through the Analysis of the Management Situation where a plan is being revised. It may be advantageous to do them concurrently when the opportunity arises. Information from Subbasin Review can also be used in the plan amendment process.

Figure 3 illustrates how levels of analysis inform land management decisions through the agencies' planning systems.

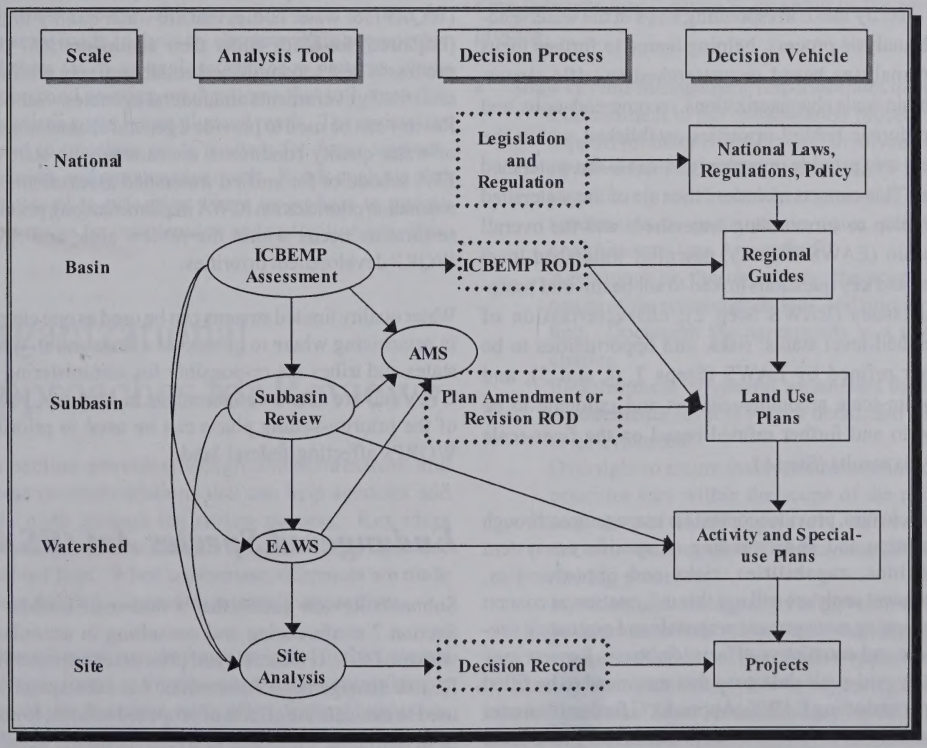


Figure 3. ICBEMP Analysis and Decision Framework Conceptual Diagram.

Ecosystem Analysis at the Watershed Scale (EAWS)

Subbasin Review establishes the need and priorities for conducting EAWS within the review area. Subbasin Review and EAWS represent two key components of the ecosystem-based planning and management process. They are designed to 'step-down' broad-scale information and decisions to site-specific actions to ensure that broad-scale decisions are viewed within the context of local conditions, and that local decisions are made within the context of broad-scale goals and objectives.

Similar to Subbasin Review, EAWS involves a systematic process for assembling, organizing, interpreting, and presenting information, relevant to issues appropriate to the scale, to establish context for subsequent analysis and decision-making. Issues, information, and priorities identified at the subbasin scale feed directly into corresponding steps in the watershed-scale analysis process, helping teams to further focus their analyses based on watershed-specific issues. Subbasin-scale characterizations, recommendations, and the rationale behind priorities established within the review area provide important context to the watershed scale. This context includes: the role of the watershed in relation to surrounding watersheds and the overall subbasin (EAWS Step 1); potential watershed-level issues and key questions linked to subbasin- and basin-level issues (EAWS Step 2); characterization of watershed-level status, risks, and opportunities to be further refined by EAWS (Steps 3, 4, and 5); and subbasin-scale recommendations and rationale to be tiered to and further refined based on the finer-scale analysis results (Step 6).

EAWS, in turn, provides context for management through description and understanding of specific ecosystem conditions, capabilities, risks and opportunities. Subsequent analyses will use this information as context for designing management proposals and evaluating site-specific and cumulative effects. Subbasin Review may identify mid-scale data gaps that may need to be filled before conducting EAWS. Appendix G further illustrates the linking of information between broad-, mid-, and fine-scaled analyses.

National Environmental Policy Act (NEPA)

Subbasin Review translates and transforms information from broad-scale into mid-scale information which can be used to provide context for finer-scale NEPA analysis. The information is particularly useful for cumulative effects analysis required under NEPA. In addition, valuable information is provided on significant issues, baseline conditions, restoration needs and other information useful for NEPA analyses.

Clean Water Act (CWA)

The Clean Water Act requires protection of high quality waters and restoration of impaired water quality. As designated management agencies, the Forest Service and BLM develop a water quality restoration plan (WQRP) for water bodies that are water quality limited (impaired) for lands under their administration. This process is best accomplished collaboratively with state and tribal governments and federal agencies. Subbasin Review can be used to provide a general characterization of water quality conditions, coordinate with state and EPA schedules for unified watershed assessments and restoration prioritization (CWA implementation), prioritize restoration needs within the review area, and revise WQRP development priorities.

Water quality limited streams can be used as one element in prioritizing where to go next at a finer scale. Where states and tribes are responsible for administering the CWA and are active collaborators in a review, results of the priority-setting phase can be used to prioritize WQRPs affecting federal land.

Endangered Species Act (ESA)

Subbasin Review establishes a mid-scale context for Section 7 conferencing and consulting in accordance with the ESA. It indicates and prioritizes opportunities for risk management. Information can subsequently be used to evaluate the effects of proposed actions; to assist in determining measures to avoid jeopardy, negative impacts on listed species and critical habitat, and adverse

modification of critical habitat; and to help reverse declining habitat and population trends. The presence of threatened, endangered, and proposed (TEP) species would be used as an element for determining where to go next at a finer scale, such as EAWS.

Healthy Rangelands Initiative

Subbasin Review establishes priorities for further analysis and future activities within the review area for restoration and conservation. These integrated priorities can be used to modify priorities developed during the priority-setting phase for the BLM Healthy Rangelands Initiative and Forest Service allotment priority system.

Roads Analysis

Subbasin Review establishes a mid-scale context for finer-scale roads analysis by characterizing geomorphic conditions (such as geology, drainage patterns, slope position) and existing road patterns that influence risk from existing and future planned roads. The review can be used to prioritize roads analysis for future upgrade, restoration, and maintenance needs. Roads analysis also can be used to prioritize where to go next to pursue opportunities for maintenance and restoration activities.

Organizational Approaches for Reviews

This section provides background information and process recommendations that can help agencies and teams work through the review process. Key ideas that have proven successful in other team efforts are presented here. When appropriate, references are made to more detailed information in specific appendices.

Subbasin Review is more than a review of the biophysical conditions found in the review area. Its success hinges on working together with other federal agencies, American Indian tribes, and state and local governments in a collaborative manner to meet the objectives of Subbasin Review. The purpose of this section is to assist teams with their collaborative efforts.

As teams are formed, the extent of individual members' participation depends on the needs of the review and the willingness Linksand ability of the collaborators to participate. Teams may encounter organizational problems with getting started and with maintaining the process schedules. These problems can be overcome as long as team members take the time to prepare themselves for the team interaction. In their desire to get on with the 'real' work, teams may be inclined to bypass or eliminate some much-needed team-building steps. Investing sufficient time to incorporate the following suggestions and other team management procedures can result in large payoffs in time and collaborative accomplishment down the road.

Line Management Considerations

Line manager involvement is essential to the review process.

- Some key line management responsibilities include:
  - Commitment to the collaboration process and support for other collaborators' involvement.
  - Involvement of collaborators early in the organizing of the review process; reach agreements on participation, roles, and time commitments (see Appendix F).
  - Agreement on the objectives, the scope and nature of the recommendations, and priority setting. Document the agreements in a review charter.
  - Establishment of general parameters for time requirements, level of review detail, and issues to be evaluated.
  - Oversight to assure that recommendations and priorities stay within the scope of the review and do not inappropriately narrow the decision space or otherwise stray into decision-making processes.
  - Initiation and management of government-to-government collaboration with local tribal government officials and their staffs (Appendix D).
- Identify team leadership prior to beginning the review process. Team leadership may be delegated to a single leader when one agency is the dominant manager or to co-leadership if federal project management is divided between two agencies.
- Identify team leaders with good team management

skills; meeting facilitators with skills in working with groups that may have strong viewpoints; record keepers familiar with ecosystem and resource issues; and a method to keep track of data and information.

- Most reviews will have a core group of specialists skilled in vegetative ecology, hydrology, aquatics, and terrestrial wildlife, as well as specialists in recreation/visual resources, socio-economics, computer data base management, tribal expertise, and GIS mapping. Additional specialists can be called upon for characterization as needed.
- Teams should establish the few focal issue areas early in the process, and use the issues to finalize skill needs.
- As the review process develops, new issues may emerge that were not initially identified. Add specialists skills if these new issues require specialist inputs currently not assigned to the review.
- To facilitate final report writing, team members need to clearly document their logic for each process step they go through.
- Provide for trained collaboration specialists in initial Subbasin Reviews. It is advisable that line managers use highly skilled internal personnel, or contract for skilled individuals who have significant experience in collaborative participation.
- Conclude each team meeting with work assignments and meeting objectives for the next meeting.

Tribal Relations, Rights, and Interests

Lands now administered by the Forest Service and the BLM in the ICBEMP project area make up the traditional homelands of many American Indian tribes. Land management actions and decisions on these lands affect the rights and/or interests of these tribes and their members, because tribes depend on these lands and resources for a myriad of needs and uses ranging from subsistence uses and economic purposes to religious and cultural uses. Agency social economic policy has emphasized the goal of supporting rural communities, including tribal communities. The ability of agencies to assist tribal members and communities depends on the effectiveness of land use and management strategies to positively consider and influence such factors as tribal employment, subsistence, treaty and reserved rights, and spiritual/cultural/social needs.

Provide for early, frequent, and substantive tribal participation in Subbasin Reviews. Teams will need to be aware of tribal governmental organization and contacts. They should develop an understanding of what tribal rights and interests exist, what resources are associated with these resources and lands, and how tribal values may differ from others. Appendix D may be useful to begin discussions with tribal representatives on their specific tribal rights and interests. Appendix H references specific locations in the ICBEMP DEIS which suggest ways to incorporate tribal rights and interests into Subbasin Review. These may help review teams begin their work with respective tribal specialists or representatives of tribal governments in the review process.

Involving tribes in Subbasin Reviews at a minimum should include the following:

- Agree on the logistics of the government-to-government relationship between tribal leadership and federal leadership prior to the review process. Provide for government-to- government leadership involvement as needed.
- Many tribal governments have resource staffs that may be available for review participation. Discuss and mutually agree on staff roles and tribal leadership roles.
- Provide opportunities for interaction between review teams and agency specialists in tribal relations; the earlier this interaction takes place the better.
- Federal training, references, and other guides on tribal relations and processes should be made available to the review teams to aid them in working with local tribal governments.

Collaboration

A central message in this guide is that the usefulness of quality technical analysis will be minimal until successful collaboration occurs with partners who have strongly held viewpoints or regulatory and legal mandates.

Collaboration is an open and interactive process whereby all participants work constructively together to address their collective needs. The collaborative process embodies the concept of partnership—a powerful relationship among people to achieve a mutually beneficial goal. A partner has a strong sense of ownership in the group product and shares the responsibility for the outcome of the effort. In achieving

a shared vision, partners in collaboration can influence, and be influenced by, each other while retaining their respective decision-making authorities.

Building relationships and trust through collaboration requires time. Intergovernmental team-building is not an event beginning with Subbasin Review; rather, the Subbasin Review collaboration is one step in an on-going relationship. Teams often fail to meet their objectives by not realizing how hard a concept collaboration actually is, and how much time and effort must be invested to be successful.

Working effectively and efficiently in an interagency and intergovernmental setting requires time to form, build, and nurture the team (see Appendix F). Land managers need to participate with collaborative partners in the development of management priorities, and these partners must be able to operate more in a creating rather than a reviewing mode. Specific needs that leaders and teams should recognize are:

- Significant improvement in intergovernmental collaboration can come with a well organized effort for working together with intergovernmental partners (Appendix B).
- Collaborative partners' time commitments and availability can be an issue. If collaborators can't participate to the level desired, identify key points in the review process where collaborators should be available to best influence the process. Such key points should include the issue identification, prioritization, and recommendation phases. All partners need to agree on how all involved can effectively contribute when it is most critical to do so, while still providing for the inevitable differing levels of participation.
- Provide briefings or meeting notes when partners miss sessions or when substitute individuals are attending to maintain continuity among collaborative partners.
- Some public participation may be a desirable option for reviews. However, the intent of the review process is first to establish intergovernmental collaboration, then to involve the public in decision processes.
- Collaboration in initial pre-planning meetings is important to identify all data available to the team and to identify and gain initial support for the objectives and outcomes of the review.
- Core teams, which include collaborative partners, can be designated to act as staff to the whole collaborative team. Remaining partners can support the review effort through participation in periodic briefings and meetings. Agency team members can be assigned to specific collaborators as "points of contact" to maintain communication and feedback between meetings.
- Teams that are organized for longer periods of time and that conduct several reviews can be more efficient than teams that complete only one review and disband. Teams should add people with local resource knowledge when needed. Another option is to use full-time team leaders, data base/GIS managers, and writer/editors, with *ad hoc* specialists for each review. This option may be less efficient than long-term teams but does gain some efficiency with key experienced team members in lead and key support roles.
- Accommodate partners who cannot directly commit to any involvement in the review process with alternate forms of information sharing and participation.
- Provide team members with a clear understanding of FACA requirements that apply. Appendix E includes a summary outline of key parts of the FACA rules and procedures with which teams need to be familiar.

Conducting the Review

Step 1 ~ Preparing for Review

Agencies need to plan for a pre-work phase prior to initiation of Subbasin Reviews. Identification of team composition and function along with the tools, processes, and information available to create an efficient process are important steps in preparing for the review. Careful preparation during this phase will save time and effort by the team and allow them to work effectively during the actual review, where they can concentrate on critical work items. Pre-planning efforts include the following key process items:

- Line managers initiate and manage a pre-work phase for subbasin reviews.
- Data needs and GIS or data compatibility (multi-agency data) should begin in advance of Subbasin Review. Organize initial data needs based on pertinent broad-scale science findings (Appendix A).
- The team should agree on and document meeting ground rules, review objectives, and review terminology. All team members need to clearly understand their roles in the process. Ground rules should include how meetings are conducted and how decisions are made.
- Teams should consider preparing a collaboration plan for each review (see Appendix C) that has full collaborative partner participation. This plan can be a simple one page document or as comprehensive as needed if collaboration issues are significant. The plan should consider such items as:
  - Mutually agreed upon expectations from the reviews.
  - Agreed upon levels of collaborative participation by individual partners.
  - Agreed upon conflict resolution processes.
  - Identified products or outcomes from the reviews.
  - Agreed upon collaboration time periods.
- Should public involvement be chosen as a part of the review process, build a well laid out public involvement plan that provides a clear understanding of the public involvement objectives, processes, and schedules.
- *Consensus* should be the dominant process for recommendations and priority-setting, with a fall back to line manager responsibilities. "Majority rules"(voting) processes are not suitable when trying to gain collaboration support when most partners have significantly different viewpoints. Given the need for integrated strategies—as well as the regulatory, tribal, or community responsibilities of many of the collaborators—anything less than consensus has a high likelihood of failure. A majority rules process creates a win-lose environment. The objective of the collaboration effort is to find common ground that all participants can either fully agree with or be willing to live with. Gaining understanding, if not full support and agreement, as to how and why some priorities may be selected over individual concerns is the essence of a collaboration or consensus-building process. This process can be messy and time consuming, but many leaders believe it is the only way positive progress can be made with contemporary land management decisions.

Conducting The Review

To Dos

- Build lasting relationships through communication. It is impossible to over-communicate when working together.
- Use small informal groups to build relationships.
- Discuss problems openly.
- Seek commitment to resolve problems, and don't over-plan.
- Invest the time to reconcile differences, so the process of conflict resolution is successful.
- Hold people accountable to participate.
- Write clear and concise roles, missions, goals, and objectives.
- Early on, identify areas of conflict and take care of the resistance issues.
- Stay professional and work on building relationships.
- Establish a visible review process.
- Encourage risk taking.
- Establish clear priorities.

Watch Outs

- Don't surprise people; keep people informed.
- Are individual (agency) goals realistic?
- Are people motivated to do the review?
- Do personal values dominate current positions?
- What stakes or primary interests do people bring to the table?
- Do individuals present have the authority to agree to lasting solutions?
- Do some people feel like underdogs?
- Are people motivated to collaborate or to win?
- Avoid position-based or value-oriented debates.

Documentation

- Simplify processes; don't overdo the review.
- Summarize large volumes of information.
- Don't try to selectively implement individual functional recommendations, but aim for integrated recommendations.
- Get rid of 'single use' strategies.
- Don't over-design the solution.
- Balance analysis with good judgement.
- Identify management's ability to implement recommendations.
- Don't oversell the end results.

Step 2 ~ Identifying Mid-scale Issues

The purpose of issue identification is to focus the review on mid-scale status, risks, and opportunities (see glossary) within the review area and to link the review area to the broad-scale findings and direction. A review of subbasins can be unnecessarily expensive and time consuming unless it is focused on the most relevant ecosystem priorities and management concerns. Issues appropriate at the mid-scale provide that focus. Broad-scale issues and findings from the Interior Columbia Basin *Scientific Assessment* (Quigley and Arbelbide 1997 and other scientific documents associated with the ICBEMP) set the context for issues in Subbasin Review within the interior Columbia Basin (see Appendix A). At finer scales, review issues and findings provide a starting point for Ecosystem Analysis at the Watershed Scale (EAWS) and a basis for cumulative effects analysis for land use proposals.

Collaborative issue selection represents an important synthesis step in which pertinent broad-scale issues and proposed local (mid-scale) issues are reviewed by the group, interrelationships are discovered, and an integrated list is agreed on to help focus subsequent steps. The resulting issues provide a commonly accepted foundation for characterizing the review area and prioritizing subsequent work within the area.

Ideas and Techniques for Issue Identification

- ***Start With Broad-scale Findings:*** To help meet the goal of ensuring that on-the-ground actions

Example Step-by-Step: Identifying Mid-scale Issues

a. Preliminary team members review the list of broad-scale findings and issues (Appendix A and Appendix D and other sources), translating those found to be relevant to the review area into an initial list of "mid-scale issues linked to the broad scale."

b. Potential collaborative partners are invited to an issue brainstorming session and asked to suggest mid-scale issues to be used as a starting point for the meeting. A list of pertinent broad-scale findings may accompany the invitation letter.

c. Meeting participants are briefed on the ICBEMP subbasin-scale review direction and initial list of mid-scale issues. The group agrees on ground rules for the meetings and may develop screening criteria for proposed issues. The group then identifies issues to be addressed in the review.

d. Core team members refine the brainstorm list, consolidating related issues into a manageable number of core issues.

e. Core issues are circulated to the collaborative partners for verification and feedback.

f. The core team finalizes the list of core issues to focus the remaining steps of the review process (subject to collaborative revision as new information is discovered).

contribute to meeting broad-scale objectives, issues identified for Subbasin Review should be linked to pertinent broad-scale issues and findings. Appendix A summarizes the broad-scale science findings for the ICBEMP to be used as a starting point for identifying issues at the subbasin scale. In addition, Appendix D provides tribally-identified basin-wide issues to be considered. Not all elements on the lists are applicable to a specific review area, but the relevant broad-scale conditions should be addressed in Subbasin Review. Teams should review pertinent sections of the science assessment reports to better understand the context behind these findings determined to be relevant to the review area.

- ***Develop Issues Collaboratively***: Collaboratively developed issues, built from pertinent broad-scale issues and local (mid-scale) issues identified by the various partners, provide a commonly accepted foundation for characterizing the review area and prioritizing subsequent work within the review area. The local issues can be collaboratively developed through brainstorming sessions and then consolidated with issues derived from pertinent broad-scale findings to form a manageable list of issues appropriate at the mid-scale. An initial list of broad-scale findings deemed to be relevant to the review area (that is, a subset of the broad-scale findings summarized in Appendix A) can be distributed to collaborative partners prior to the brainstorming session to stimulate thoughts on issues to bring to the session.

  Federal and non-federal partners would look to their specific plans, programs, laws, regulations, and policies for potentially relevant issues. Federal land-management agencies in particular would consider issues, goals, and objectives of their land use plans, as amended by the ICBEMP ROD, and the results of any other assessments previously conducted such as biological assessments within or around the review area. Another broad-scale source of relevant issues would be ICBEMP EIS public comment summaries specific to the vicinity of the review area.

  Some examples of local (or mid-scale) issues proposed during collaborative brainstorming sessions and carried through the review process include: recreational access to a Wild and Scenic River corridor, reintroduced wolf populations, barriers to fish migration in a major portion of the area, and reduced economic viability of ranches in an area prone to development of vacation homes. The consolidated issues to be carried through the review process should be documented as comprehensive issue statements that carefully describe the context of the issue (that is, why it's an issue and how it relates to the review area and to pertinent broad-scale issues and findings).

- ***Maintain Appropriate Scale***: Issues are related to scale. The focus changes with scale. To maintain the mid-scale perspective, it is helpful to define issues in terms of conditions (such as reduced riparian vegetation) rather than perceived causes (such as cattle grazing) at this scale. Most change agents operate only at finer scales, so they would be most appropriately analyzed at those scales (for example, determining whether the primary cause of poor rangeland conditions is grazing in general, overgrazing by cattle, overgrazing by other ungulates, grazing only during certain seasons, or physical site characteristics beyond human control). They should therefore be deferred for finer-scale analysis.

- ***Solicit Interest-Based vs. Position-Based Issues***: Collaborative efforts to develop issues based on common interests (interest-based, such as "the area's degraded water quality should be improved") are more likely to achieve consensus than those based on individual's or group's positions (position-based, such as "keep all roads open for recreation" or "ban clearcutting"). Taking positions often results in unnecessary polarization among collaborators, particularly when such positions are associated with preconceived notions of causes or solutions, which generally are not discernible at the mid scale. The mid-scale is an appropriate scale for assessing conditions and effects and for identifying common interests and joint opportunities, such as the need and relative priority for ecosystem restoration. Determining specific causes and potential on-the-ground solutions would be more appropriately addressed at finer scales, following the priorities agreed upon through the collaborative Subbasin Review process. Some general causes may be discernible at the mid-scale (for example, some barriers to connectivity of old forest habitat or between fish strongholds), but detection of

interrelated influences and appropriate solutions may require finer-scale inquiry.

- ***Track Issues Through the Review*:** Mid-scale and pertinent broad-scale issues should be visible in each step of the process and must track through subbasin-scale review reports. Common or related issues provide links between scales of analysis, as well as common threads within each analysis; the links and threads facilitate logic tracking and eventual design of projects that can meet multiple-scale objectives.

- ***Revisit Issues as Needed:*** Identifying review area issues is an iterative process that starts in the initial organization phase and continues throughout the review. The issues are subject to refinement as a new understanding of the review area develops through the process.

- ***Document Issues to be Addressed at Other Scales:*** Collaborative teams may develop 'appropriateness' criteria to screen issues (for example, screening out issues that are not at an appropriate scale, or screening out issues that are position-based rather than interest-based). Brainstorming often brings to the surface issues that need to be addressed by analyses and planning efforts at other scales (such as at the watershed scale or in subsequent project planning, say for specific road closures). Participants may become concerned when issues deemed to be inappropriate for a mid-scale review are dropped from consideration. All parties want assurance that the screened-out finer-scale or other issues will be addressed during subsequent analyses. It's important to capture these products to assist with subsequent analyses. They should be documented in the report as part of the review findings or as follow-up needs, similar to the discussion of data gaps.

- ***Use Issues to Focus Subsequent Steps:*** The selected issues (Step 2), in combination with an understanding of the review area's character (Step 3), help teams to subdivide review areas for prioritization and development of recommendations (Step 4). Issues focus inquiry for describing the area's character, and the resulting description identifies dominant relationships, patterns, and interactions across the review area. Using issues and characterizations together, teams can delineate subdivisions that would address issues most efficiently at finer scales. The concept of stratifying the review area for eventual prioritization purposes is addressed further under Steps 3 and 4.

Step 3 ~ Describing the Mid-scale Character

A description of mid-scale character includes a general understanding of the review area relative to features and processes occurring at the broader scale and across neighboring subbasins, as well as a characterization of current conditions and trends within the review area. Describing the variability within the review area is an important step leading to application of broad-scale direction and science findings to on-the-ground activities. It provides the basis for characterizing status, risks, and opportunities across the review area and for delineating subdivisions for prioritization and development of recommendations in Step 4.

The primary purposes of describing mid-scale character are to: (1) identify the dominant physical, biological, and human processes or features of the review area that affect distribution, conditions, and trends of major ecosystem components; (2) link the review area to the broad-scale findings and direction; (3) provide context for finer-scale analyses and decisions; (4) provide the basis for developing priorities and recommendations; and (5) provide information useful for monitoring mid-scale conditions.

Identifying issues, describing mid-scale character, and prioritizing for subsequent management attention are interconnected steps, one flowing into the other and each relying on the others for context and meaning. The review is an iterative process. Although separating the steps is necessary for guidance and reporting purposes, they largely overlap, and some revisiting occurs as new discoveries refine previous results. For example, integrating mid-scale character information and describing the resulting interrelationships (to determine status, risks, and opportunities) and subdividing the review area (for eventual prioritization and reporting purposes) are phases that bridge the character description and prioritization steps; they do not cleanly fall within either Step 3 or 4.

Other Considerations for Describing Mid-scale Character

Mid-scale Data

The availability and quality of mid-scale information to be used in characterizing review areas can vary greatly by location and by discipline. Where mid-scale data are readily available among intergovernmental partners and can be quickly cross-walked with the broad-scale findings and objectives, the review can proceed smoothly and efficiently. Where mid-scale information is lacking for one or more critical disciplines, reviews will need to consider the broad-scale characterizations relative to the review area, opportunities to aggregate and summarize existing finer-scale data, and professional judgement. Any remaining data gaps, both availability and quality, need to be documented, along with a description of how they factored into the review, a

Example Step-by-Step: Describing Mid-scale Character

a. Following verification of selected issues with collaborative partners, issue topics are assigned to core team members to begin gathering existing information (including that available from partners) for describing the character of the review area in relation to that issue.

b. Core team members gather background information (such as geology, topography, road densities, stream network, sensitive soils), then distill the information into concise, logical descriptors across the review area (such as riparian habitat properly functioning, functioning at risk, not properly functioning). The information is displayed on a map of the review area.

c. Collaborative partners are invited to a characterization sharing and verification session.

d. Core team members present their distilled (and necessary background) information to the partners, to facilitate discovery of patterns and relationships within and among the issue topics (such as riparian habitat, water quality, and fish distribution).

e. Partners ask questions and provide feedback and advice to the core team for additional data or interpretation needs.

f. Core team members finalize characterizations within their issue topic.

g. Phasing into Step 4, the team as a whole determines a logical stratification of the review area based on the issues and character of the area.

h. The area's overall character and variability are documented. Team members begin to translate their distilled information into ratings and descriptions of status, risks, and opportunities for each subdivision to assist priority -setting and development of recommendations.

determination of how they affect confidence in the final product, and specific recommendations for filling them (for example, through subsequent analyses or prior to taking certain types of subsequent actions within the review area).

Although the broad-scale information developed for the ICBEMP provides important *context* for Subbasin Review, much of it is not directly usable for mid-scale analysis because of its coarse nature; when broad-scale information is dis-aggregated for use at the mid-scale, it may lose its accuracy and meaning. On the other hand, if teams use fine-scale data in the absence of appropriate mid-scale data, mere aggregation does not usually provide the perspective necessary to reveal important patterns and relationships within and across the review area. Fine-scale data will likely need to be reconfigured and interpreted to make it useful for addressing mid-scale issues. For example, translating transportation maps into road density classes, soil or landtype maps into erosion risk categories, or forest habitat maps into healthy/unhealthy dry or moist forest displays provides the broader perspectives that are necessary for mid-scale characterization and synthesis.

Figure 4 illustrates the need to summarize fine-scale data for use at the mid-scale.

It is also important to ensure that any mid-scale data categories used in the review either match or 'nest within' counterpart broad-scale data categories, to facilitate comparison among subbasins and between scales for context setting as well as step-down of direction. For example, the ICBEMP *Scientific Assessment* may identify an area as "late-seral lower-montane single-layer forest." Mid-scale characterizations within this terrestrial community type could describe sub-units in terms of "interior ponderosa pine" or "interior Douglas fir" cover types with an "old single-strata forest" structural stage. If it's necessary to further stratify the area to adequately describe its mid-scale variability, subcategories should readily nest within the established broader categories. The ability to track back from site scale to broad scale is critical to subsequent decision support as well as for future monitoring and adaptive management.

Verifying Pertinent Broad-scale Assumptions and Findings

Since most of the broad-scale data are relative across the basin or are generalized, it is not intended or beneficial to directly compare that type of broad-scale data with mid- or fine-scale data. The intent is, instead, to characterize review areas using mid-scale information linked to broad-scale issues and findings in order to establish the context needed for subsequent analyses. In other words, teams should primarily use broad-scale findings and data as context, but mostly use more local information for subbasin-scale review and for finer-scale context.

A few broad-scale data layers require local verification and possible adjustment because they were predicted or unknown for the subbasin. The intent is to ensure (1) that more "accurate" context will be stepped down to subsequent analyses, and (2) that basin-level direction associated with that context will be applied to appropriate landscapes and conditions (for example, direction related to aquatic core areas and terrestrial source habitats; threatened, endangered or proposed (TEP) species; and restoration priority areas). Where subbasin information is also needed to adjust the broad-scale database for the purpose of monitoring or adapting broad-scale decisions, Subbasin Review results that correct certain predicted layers, such as road density or aquatic strongholds, would be reported through the monitoring process to be developed for ICBEMP implementation. ICBEMP data layers to be locally verified through Subbasin Review may include: road densities, strongholds, aquatic core areas and terrestrial source habitats, and TEP species presence or absence.

Subdividing the Review Area

Subdividing the review area too early can limit the ability of teams to distinguish patterns and groupings of features important and unique to the review area, particularly if teams summarize their characterizations for entire subdivisions. When team members share their interdisciplinary (or issue topic-specific) depictions of the area among themselves and with collaborative partners, patterns and relationships often emerge that suggest logical subdivisions for subsequent recommendation and prioritization purposes.

Many factors have led teams to define subdivisions along 5th- or 6th-field Hydrologic Unit Code (HUC) boundaries, including the need to identify where and when Ecosystem Analysis at the Watershed Scale is required or desired within a subbasin. But other important factors may suggest alternatives to HUC boundaries to better address issues not based on hydrology (such as where terrestrial and social issues are dominant).

Information at Varied Geographic Scales

Every scale reveals and conceals information.

People commonly want to carry site-level data to the watershed or subbasin scale. This is possible only if the data are summarized appropriately for representation at the broader geographic scales.

At the site or stream reach scale (1), individual features such as pools, riffles, debris jams, and bars are evident. Standing at the edge of the stream, one can see the character and condition of the channel. At the same time, one can't see how this reach relates to adjacent reaches. The character of the stream network is invisible.

If the site-level data are carried to broader geographic scales (2), the identity of individual features is lost. Site data merge to become lines. We gain some insight to the channel network but lose the ability to see features and site-level conditions.

Aggregating the site-level data to the watershed scale (3) conceals data in a pattern that is so dense as to be almost worthless.

If the data are purposefully summarized, new patterns and information show up. If the data are summarized to present only the channels with broad floodplains (4), information about the channel network is revealed. Strong linear features that suggest a dominant geologic control of the stream network are apparent in diagram (4). This information is invisible at the site scale and is easy to overlook in diagram (2). Too much data conceal channel pattern information. Conversely, there is no way to describe channel condition using the information presented in diagram (4).

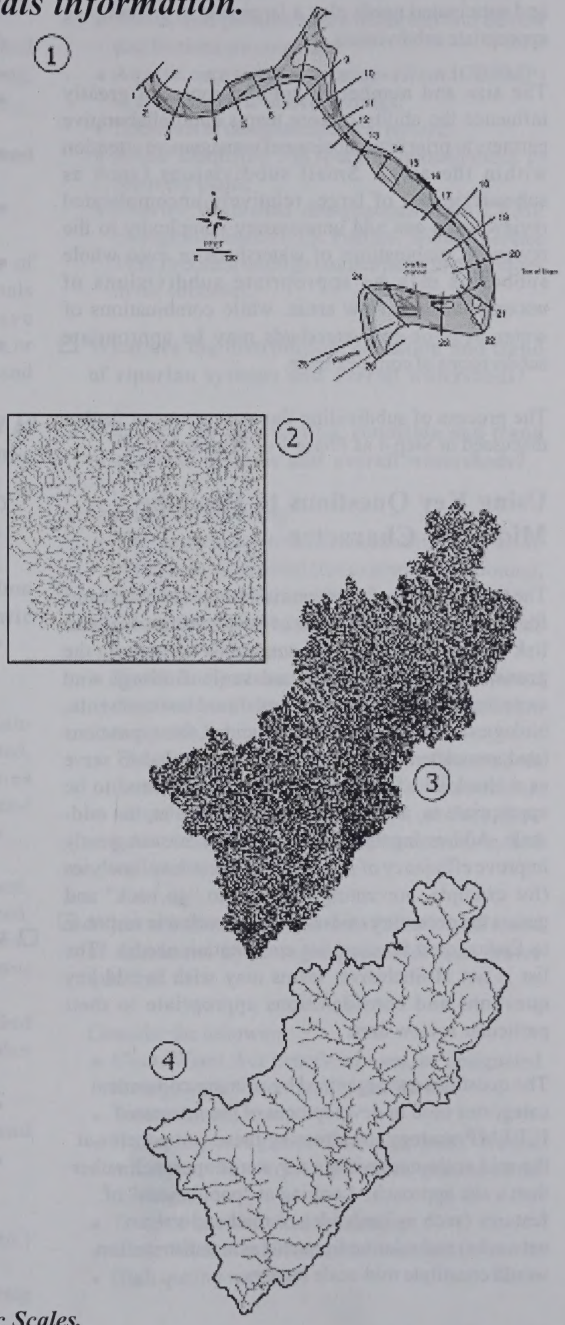


Figure 4. Information at Varied Geographic Scales.

Stratification is a tool used primarily for determining relative priorities within the review area for subsequent analysis and management attention. Dominant issues and anticipated needs play a large role in determining appropriate subdivisions.

The size and number of subdivisions can greatly influence the ability of core teams and collaborative partners to prioritize subsequent management attention within the area. Small subdivisions (such as subwatersheds) of large, relatively uncomplicated review areas can add unnecessary complexity to the review. Combinations of watersheds or even whole subbasins may be appropriate subdivisions of uncomplicated review areas, while combinations of watersheds or subwatersheds may be appropriate subdivisions of complex units.

The process of subdividing the review area is further discussed in Step 4 as Phase 1 of Prioritization.

Using Key Questions to Describe Mid-scale Character

The following list of questions is designed to help teams focus on important aspects of review areas that can link broad-scale issues and conditions to those on the ground. Drawn from broad-scale findings and experience with regional and local assessments, biological opinions, plans and programs, these questions (and associated considerations) are intended to serve as a checklist of information needs considered to be appropriate to, and reasonably accessible at, the mid-scale. Addressing them at the subbasin scale can greatly improve efficiency of subsequent project-level analyses (for example, preventing the need to "go back" and gather the necessary mid-scale information in response to Endangered Species Act consultation needs). The list is not all-inclusive; teams may wish to add key questions and considerations appropriate to their particular review area.

The questions are organized by primary component categories used in development of the integrated ICBEMP strategy. Addressing these components at the mid scale necessitates a systems approach rather than a site approach. Looking at "populations" of features (such as landslides or road and stream networks) and relative frequencies and distribution would constitute mid-scale inquiry.

Landscape Dynamics

☐ **What is the physical setting?**

Consider the following:
- Local climatic conditions;
- Topography including elevation, aspect, slope, landform classes, valley types;
- Geology, including any effects of bedrock and surficial conditions;
- Watersheds and aquatic features (stream networks, lakes, etc.);
- Geography, including the shape, dimension, orientation, and position of the subbasin and component watersheds;
- Known rare or unique geologic or geomorphic features.

☐ **What are the distribution, condition, and trend of terrestrial vegetation?**

Consider the following:
- Current composition, density, and structure of forest and rangeland vegetation, linked to ICBEMP assessment classes, refined as necessary at the subbasin scale;
- Estimated historical composition, density, and structure of forest and rangeland vegetation, linked to broad-scale assessments, refined as necessary at the subbasin scale, in terms of ranges and probabilities;
- Trends and patterns when historical and current composition, density, and structure are compared;
- Relationships between upland and riparian vegetation, current and historical, in the same terms;
- Known rare or unique vegetation types.

☐ **What are the frequency, intensity and pattern of major disturbances?**

Consider the following:
- Fire intensity, severity, and frequency under current and historical conditions;
- Current fire characteristics as departures from historical;
- Other disturbances that may be important in generating subbasin- and watershed-scale vegetation conditions (insects, disease, pathogens, wind, etc.);

- Human alterations (roads, timber and special forest products harvest, excessive livestock grazing pressure, mineral developments, water impoundments and diversions, etc.);
- Erosion processes (including types, frequency and distribution of such processes as mass wasting, surface erosion processes, etc.).

☐ **What are the distribution, condition, and trend of exotic and non-native species?**

Consider the following:
- The presence, distribution, and general rate of spread of exotic plants, diseases, or animals (terrestrial and aquatic) that may have changed or could change vegetation, habitat, or disturbance characteristics at the subbasin and watershed scales;
- The presence, distribution, and general rate of spread of exotic animals and plants that have displaced or could displace native species.

Aquatic/Riparian/Water

☐ **What are the estimated distribution, population condition, and trend of important aquatic species?**

Consider the following:
- Presence of important aquatic and riparian-dependent species (including federally listed, proposed and sensitive species, species important to tribes, species of concern, and valuable fisheries);
- Current distribution of these species;
- Estimated population status (strong, depressed, unknown, absent) of these species by watershed;
- Probable historical distribution of these species;
- Trends/patterns when historical and current distributions are compared;
- Habitat for widely distributed aquatic and riparian-dependent species in relation to other adjacent subbasins.

☐ **What are the distribution, condition, and trend of aquatic habitat?**

Consider the following:
- Comparisons of habitat (core, fringe, etc.) among watersheds within the subbasin;
- Connectivity of habitat within the subbasin among watersheds and between subbasins;
- Historical pattern and amount of productive aquatic habitat;
- Trends and patterns when historical and current distributions are compared;
- Aquatic core area designations (from ICBEMP) in comparison to above findings;
- Locations of designated critical habitat;
- Areas identified for specific management in recovery plans;
- Priority Watershed designations from LRMP biological opinions (U.S. Fish and Wildlife Service 1998) verified through comparisons to conditions in the subbasin.

☐ **What are the distribution, condition and trend of riparian systems and overall watersheds?**

☐ **What are the distribution, condition and trend of riparian systems and overall watersheds?**

Consider the following:
- The general current functionality of riparian systems by watershed (for example, functioning, functioning at risk, non-functioning);
- Connectivity of riparian systems among watersheds within the subbasin;
- Trends and patterns when historical and current distributions are compared, especially in relation to aquatic habitat condition.
- The general current functionality of watersheds (considering both riparian and upland conditions, as well as hydrologic regimes, surface flow patterns, stream crossings, and erosion and sedimentation patterns).

☐ **What are the distribution, condition, and trend of dominant hydrologic processes and water quality?**

Consider the following:
- Clean Water Act beneficial uses, as designated through state water quality standards;
- Treaty-related uses;
- Hydrologic regimes (such as peak flows, minimum flows, precipitation, groundwater readings);
- Trends from historical to current;
- Clean Water Act 303(d) listed streams;
- High quality waters.

Terrestrial Species

☐ **What are the distribution, condition, and trend of habitat or special habitat features for terrestrial species of concern (plant and animal) and rare plant communities?**

Consider the following:

- Presence and distribution of important species (including those listed as threatened, endangered or proposed for listing under the Endangered Species Act; sensitive species; species of interest to the states or tribes; and species related to issues specific to the individual review area);
- Trends in habitat for these species from historical to current;
- Location of designated critical habitat;
- Areas identified for specific management in recovery plans;
- Current distribution and condition of source habitat (as defined in the ICBEMP assessments) for the groups included in the five "families" of terrestrial species identified as having source habitats that have declined substantially at the broad scale between historical and current;
- Trends in these source habitats between historical and current;
- Terrestrial source habitat designations (from ICBEMP) in comparison to above findings;
- Areas of human alterations that may be affecting these species and "families" in the review area and among watersheds;
- General condition and trend of habitat for riparian- and wetland-dependent species within the review area;
- Presence of important wide-ranging carnivore areas and dispersal corridors (required to be mapped under ICBEMP standards).

(Note: Population data are generally not available for most species. Also, species populations are often influenced by many factors which are outside the control of land management agencies. Thus, population trends and habitat trends are not necessarily similar in magnitude. However, population trend data should be used to supplement the review when available.)

Social and Economic

☐ **What are the distribution, condition, and trend of important human uses and values?**

Consider the following:

- Important cultural, spiritual, and religious areas;
- Rural-urban / wildland interface areas;
- Land ownership patterns;
- Important recreation use areas;
- Relatively large historical features (such as historic trails);
- Important road and other access systems;
- Culturally significant species and habitat locations (including tribal plant species and tribally significant big game and other animal species);
- Important mineral, forage, wood, and other goods and services production areas;
- Local communities (communities within or near the review area—including American Indian communities—and their degree of isolation, economic specialization, and dependence on federal land resources);
- Visual qualities;
- Sense of place;
- Tribal rights and interests;
- Historical and current trends for each of the identified human uses;
- Economic health of the area;
- Demographics of the local population; and
- Local land use and economic development plans

Distilling the Information for Use in Step 4

Summarizing Descriptions of Mid-scale Character for Comparison and Reporting Purposes

Teams can use some form of matrix or map overlay process to show relative differences among subdivisions within the review area. Using either a qualitative- or quantitative-based matrix with supporting interpretation can help with interdisciplinary comparisons and synthesis of the information, providing important background for the subsequent prioritization process. If relative ratings are used in the matrices, the factors or rationale for the ratings need to be well documented to provide context for subsequent planning and analysis and for future versions of the review.

Synthesis & Documentation (Bridging Steps 3 and 4)

Integrated mid-scale findings are necessary to help focus collaborative priority-setting and to provide useful context for fine-scale inquiry and decisions. Teams should strive to discover patterns and relationships among the characterization findings and, as part of Step 4, to document those relationships in terms of status, risks, and opportunities within the review area. This information forms the basis for establishing the 'ecological' (or strategic) priorities in that step. Collaborative partners and, eventually, end-users of the final report should be able to discern the primary functions and processes operating across the review area; the dominant conditions, risks, and opportunities within it; its relationship to surrounding units; and its role in the larger basin.

Examples of integrated findings (that is, findings that describe relationships among various ecosystem components based on characterizations of their condition, distribution, and trend) can be found among the Key Broad-Scale Findings listed in Appendix A. Teams can develop questions to help arrive at such findings (or match the basin-level findings to similar characteristics within their review area) and to facilitate the synthesis necessary to characterize status, risks, and opportunities leading to integrated priorities and recommendations. Volume 2 includes examples from recent assessments that illustrate development of integrated findings. Appendix G includes an example of using integrated findings at each scale of the step-down process to establish priorities for "taking the next closer look," context for subsequent analyses and to determine appropriate locations for meeting objectives at multiple scales.

Step 4 ~ Developing Integrated Priorities and Recommendations

Subbasin Review makes recommendations for future management attention and establishes priorities for where to go next with fine-scale analysis such as EAWS and roads analysis. None of the recommendations or priorities developed during a Subbasin Review will lead directly to management activities. Rather, they set the stage for finer-scale analysis, land use planning decisions, and/or site-specific NEPA analysis. Recommendations and priorities established in the review are not decisions and, therefore, do not require NEPA analysis.

Recommendations and priorities are based on knowledge at a specific point in time. The review process may need to be supplemented as new information accumulates; as major prioritization factors change (for example, regulations, policies, and other legal considerations); as collaborators express concerns about priorities; as resource conditions dramatically change (for example, fires or floods); or as social/economic conditions change. Updating the review may lead to new priorities and recommendations.

Prioritization

The purpose of prioritization is to determine the urgency and timing of needed actions across the review area. Limited agency budgets and various priorities among collaborators call for a joint priority-setting system. This will ensure the most important combination of issues are addressed first and maximizes the opportunities for pooling interagency (federal agencies) and intergovernmental (American Indian tribes, states, counties, and cities) resources to address the highest priority issues within the review area.

An underlying goal of hierarchical ecosystem assessment is to provide a sound basis for managing risks at multiple scales and for ensuring that on-the-ground actions are successful and contribute to meeting both broad-scale and site-specific needs. The step-down process is specifically designed to facilitate use of broader-scale findings, in combination with local issues and data, to systematically determine appropriate locations and priorities for achieving broad-scale objectives. Collaborative priority-setting and pooling of resources at subbasin and finer scales can increase the likelihood of achieving broad-scale and local objectives by providing greater opportunity for compatible management across diverse ownerships and jurisdictions.

Priority-setting encompasses four phases:

Phase 1:

Identify and map subdivisions to be used for prioritization of the review area through a synthesis of specific review data developed by specialists.

Example Step-by-Step: Developing Integrated Priorities and Recommendations

Phase 1 ~ Team identifies subdivisions based on issues from Step 2 and review area character from Step 3.

- Team members come together with maps showing the distribution, condition, and trend of resources related to issues. The maps are overlaid to reveal patterns.
- Boundaries of subdivisions are drawn to reflect the emerging patterns and to highlight identified issues.

Phases 2 and 3 ~ Team develops a system to rank subdivisions which will result in a composite rating for status, risks, and opportunities for each subdivision.

- As one example, the team chooses to identify ecosystem elements that would be used to describe each issue, then rates the status, risk, and opportunity for those elements in each subdivision to arrive at a composite rating for that issue. The composite ratings for each issue are displayed on a matrix by subdivision, then weighted and summarized to arrive at relative rankings of the subdivisions into High, Medium, and Low based on logical breaks in the totals.
- Another example would be to agree on weightings for each issue. Issue topic leaders then characterize status, risks, and opportunities in each subdivision in relation to their issue and use them to rank the subdivisions. The sums of the weighted issue topic ratings for each subdivision are compared to the other subdivisions for relative ranking purposes (e.g., H, M, or L based on logical breaks in the totals for each subdivision).
- The resulting rankings under the selected system indicate where work within the review area would result in the greatest biophysical and socio-economic benefits. These rankings become the foundation for phase 4. The background behind the rankings can be translated into recommendations for subsequent work within the review area.

Phase 4 ~ Line managers from interagency and intergovernmental collaborators meet with the review team to identify and prioritize opportunities for pooling resources to address important issues within the review area and to determine what actions to take next.

Phase 2:

Develop a system with collaborative partners to integrate information and issues for prioritizing subdivisions for future management attention and finer-scale analysis.

Phase 3:

Identify long-term priorities for future management and mid- and finer-scale analysis based on issues developed in Step 2 and on biophysical and socio-economic information developed in Step 3.

Phase 4:

Agree on short-term opportunities for focusing individual agency resources or pooling interagency and intergovernmental resources to address the integrated long-term priorities. All of the priority-setting work is tempered by factors such as the willingness and ability of stakeholders to cooperate, budget constraints of agencies and cooperators, and legal requirements.

Phase 1 ~ Subdividing the review area.

Prioritization during Subbasin Review implies stratifying or subdividing the review area. Subdividing the review area before completing Step 3, Describing the Mid-scale Character, may mask important relationships needed during prioritization. Boundaries of the subdivisions should be defined using the information gathered and integrated in Step 3. Information on separate ecosystem elements (soils, vegetation, wildlife, fish, social, etc.) can be overlaid spatially on maps. The display can then be used to look for patterns that indicate appropriate subdivisions for prioritization. There is no universal subdivision that will meet the requirements of all review areas. The final decision on subdivision boundaries should be made based on whether a particular stratification is useful to the final prioritization.

Teams need to define subdivisions that are useful for prioritizing the key issues within the review area. A subdivision that is the best fit for one ecosystem element or issue often does not fit other elements or issues very well. For example, a useful subdivision for aquatic habitat issues is a watershed or group of watersheds, but terrestrial vegetation types, which cross watersheds, may be most useful for forest health. If both are significant issues in the review area, subdivisions are needed that reflect the important distinctions between the forest health findings and the aquatic systems findings. A solution for this example could be to divide a watershed into upper and lower subdivisions to separate segments of major vegetation types and watershed segments.

Creative solutions can ensure that all important review area issues can be addressed when prioritizing among subdivisions. Teams need to carefully weigh the important issues and needs. For priority-setting and recommendations, it is preferable to have a limited number of subdivisions that clearly focus on the few critical issues, rather than to have dozens of subdivisions for large numbers of lesser (non-critical or collateral) issues. Collateral issues can be addressed in the written description of the subdivision even when they were not used in the subdivision stratification process.

Phase 2 ~ Developing an integrated priority system.

Review teams should develop a priority system that rates status, risks, and opportunities within each review area subdivision. There are a variety of approaches, ranging from map-based systems to quantitative matrix assessments or more subjective assessments of relative values. The method chosen will depend on factors such as the number and complexity of the issues and the availability of data. A simple rating of high, medium, or low may be appropriate. Another method would be to use a numerical system, which allows development of a rule set to determine an overall ranking for the subdivision. A numerical system can be used to weight certain elements more heavily than others before determining the overall ranking. In some cases a combination of methods may be useful such as assigning numerical values to several variables and a summary rating of high, medium, or low for the subdivision. Regardless of the system chosen it should be kept in mind the overall goal is to maximize our effectiveness in meeting management objectives at multiple scales. Volume 2 of this guide provides examples of prioritization systems designed to fit particular review areas.

Phase 2 can be initiated by selecting one or more separate variables to represent issues. These variables can then be rated relative to those in other subdivisions. Multiple variables can be synthesized to arrive at a composite rating. The ranking can be supported by quantitative description or professional judgement. In all cases, documentation of the background for and interpretation of the ranking needs to be included in the report.

Efficient linking of broad-to finer-scale findings requires that consistent definitions of status, risk, and opportunity

be used at each scale. Subbasins within the interior Columbia Basin have been prioritized in the ICBEMP EIS for future restoration activities based in part on their status, risk, and opportunities. Subbasin Review uses the same concept of status, risk, and opportunity to evaluate and map conditions within the review area and establish priorities for management actions. The two together can be used to recommend which restoration activities and what sequence will best achieve restoration within the review area. Map displays of these integrated status, risk, and opportunities are useful for priority setting.

The following list provides some of the elements to be considered when rating species and landscapes according to status, risk, and opportunity during priority development.

Status

... of the relative conditions found among subdivisions of the review area; and
... of the relative differences of current and historical conditions among subdivisions.

Risk

... from the inherent ecosystem disturbance processes, such as insects, disease, wildfire;
... from continuing on-going management activities such as livestock grazing, road maintenance, and mining;
... from conducting new activities, such as riparian restoration and timber harvest;
... from doing nothing; and
... from trading short-term gains for long-term losses and *vice versa*.

Opportunity

... for the subdivision to respond favorably to actions that would restore ecosystem health;
... for obtaining funds for restoration;
... for maximizing restoration per dollar spent;
... for restoration under current laws, regulations, and policies;
... for restoration with current technology;
... for support of the economic and social vitality and resiliency of isolated and economically specialized communities;
... for cooperation with adjacent land owners; and
... for stakeholder participation.

A matrix or a series of matrices is a useful tool for displaying the rating elements and summary ranking. Factors leading to assignment of a priority can include the number of findings or values present, the total number of "high" ratings received, and the highest total points based on different scores for high, medium, or low ratings for individual elements.

Phase 3 ~ Developing priorities for future management and analysis.

Phase 3 involves using the physical, biological, social and economic findings developed during Step 3 and the priority system developed in Step 4/Phase 2, to prioritize review area subdivisions developed in Step 4/Phase 1 for future management and analysis. This phase establishes the 'ecological' (or strategic) priorities for the review area. The final product is an integrated priority rating or ranking for each subdivision across all issues within the review area. In some cases there may be insufficient information to set definitive priorities for the review area. In this case a high priority may be given to gathering data so that priorities can be revisited.

The utility of the priorities developed in this phase is to provide an idea of where to go and what to do next in a perfect world. The results of this phase should be made a part of the final report so that it can be used to develop future work plans. These work plans can be for such things as finer scale analysis, restoration projects, and gathering additional data for further analysis at the mid-scale. The priorities developed in this phase will provide the basis for identifying opportunities for short-term cooperative management developed in Phase 4.

Documentation is important to communicate context for subsequent analyses or planning efforts and to enable the priorities themselves to be reassessed as conditions change. It is also important to be able to explain how priorities were set in the event they are questioned by interests who were not part of the process. In some cases the ranking can be supported by quantitative description; in others where quantitative data is not available, professional judgement may be used. In either case, it is important to document the rationale for the rating system so that it can be understood by others outside the review team and can be repeated or updated in the future as new information becomes available.

Phase 4 ~ Developing opportunities for agreement on focusing agency attention and pooling interagency and intergovernmental resources.

Phase 4 involves a commitment by federal agencies, state and local governments, and American Indian tribes with interests within the review area to work together on specific activities to address the priorities developed in Phase 3. Here is where such factors as limited or directed funds, prior agency commitments, the ability of essential cooperators to participate, and legal requirements are taken into consideration to determine collaboratively where to go next. While earlier phases of prioritization are primarily conducted through collaboration of agency staffs, this phase should be conducted by line managers and officials from collaborating federal agencies, state and local governments, and tribes with authority to make commitments to activities and time schedules on behalf of their organization.

Since Phase 4 priorities are based on short-term information, such as budgets, they need to be revisited regularly. An annual or otherwise periodic meeting with collaborators to discuss accomplishments, obstacles, and next year's cooperative plans may be useful.

Recommendations

Recommendations are intended to address findings and the rationale behind the priorities arrived at through the Subbasin Review process. They may be specific to locations within the review area (such as a particular subdivision) or may apply to the entire review area. To be most useful, they should be spatially explicit (mapped) as much as possible.

Recommendations should tie to the primary expectations for the Subbasin Review process, which are to provide context and priorities for EAWS and other fine-scale analyses, identify potential project-level opportunities that can be determined at this scale, and support other decision-making and analysis processes, such as land use plans or subsequent Endangered Species Act consultations.

The recommendations can take several forms, depending in part on the work the review teams can accomplish during Steps 1 through 3 and on the information gaps discovered. It is important for teams to fully document the rationale for recommendations so that others, including subsequent users, can understand how they were developed, how much confidence can be placed in them, and how they can be updated.

The scope of the recommendations should be consistent with the limits created by the available data and time frames established for the review. Where critical information needed to address issues and to support recommendations is lacking, teams need to develop and document recommendations for filling these data gaps (for example, identifying further planning and assessment needs in relation to the risks of not having that information). For some risks, it may be appropriate to recommend constraining certain types of management activities in some areas until information critical to planning and decision making is gathered. Such recommendations do not constrain actions themselves, but instead identify factors, conditions, and risks that need to be directly addressed in design, analysis, and decision rationale for pertinent management activities.

Recommendations that address the primary intent, as well as the scale and scope, of a subbasin-scale review could be characterized as:

A. Those dealing with issues or specific risks and opportunities to be addressed in priority subdivisions (based on the rationale for the priority ratings);

B. Those addressing critical data gaps; and

C. Implications for initiating a planning process to address potential conflicts either between ICBEMP objectives and a particular land use plan allocation or between conflicting ICBEMP objectives where conditions overlap (such as restoring both forest and aquatic health).

The following examples address each of the categories discussed above.

A. Issues or Components to Address in Priority Subdivisions

Example 1 ~ Priority and Focus for Finer-Scale Analysis

Based on mid-scale information, a particular subdivision lights up as a good candidate for conservation and

restoration of aquatic resources. The presence of a high quality aquatic core area (subwatershed) and several core areas with high restoration potential provides opportunity to increase the extent of high quality aquatic habitat. Removal of barriers to fish migration, reducing road-related adverse effects, and improving water quality are other identified options to improve ecosystem conditions. These factors combined to give this subunit a high priority for "taking a closer look" within the review area. The team recommends that EAWS be conducted to further distinguish and understand how the systems are functioning and to determine the kinds and locations of management activities that can lead to successful conservation, restoration and reduction of risks.

Mid-scale roads analysis also may identify a priority for assessing roads in further detail in the northwest portion of a review area because information synthesized during the review indicates a high density road network in that subdivision, combined with a steep, dissected, erosion-prone landscape, and the presence of anadromous fish species. It would be inappropriate to make recommendations on which roads to maintain or rehabilitate at this scale.

Example 2 ~ Needs and Opportunities to Pool Resources

A particular subdivision's high priority ranking may have assumed certain levels of needed cooperation or may have identified the need to pool resources to successfully meet broad-scale, as well as local, objectives. Recommendations may identify potential intergovernmental (such as federal, state, tribal, and local), organizational (such as watershed councils, other place-based interest groups such as "Friends of...," resource groups such as Trout Unlimited or Rocky Mountain Elk Foundation, and university graduate programs), and private landowner partners. Such recommendations would also address desired partnership roles and the resources needed to achieve identified goals.

Example 3 ~ Secondary Priorities (outside highest priority subdivisions)

Although a particular subdivision may not have ranked highly in terms of integrated priorities when compared to other subunits in the review area, Subbasin Review may have identified it as having the highest risks and opportunities associated with weed infestation. The team could recommend that any funding earmarked for weed management be directed to that area over other, higher ranked integrated priority areas that do not share the weed problem.

In some cases, the status, risks, and opportunities are so clearly displayed at the subbasin scale that recommendations could suggest specific project-level (including NEPA) analysis for needed restoration actions.

Example 4 ~ Potential Project Opportunities - Rapid Intervention Actions

Collection of existing information may reveal key mid- or finer-scale risk situations that are having a dramatic effect, far beyond what was indicated in the broad-scale findings for the area. One example would be an area with higher risk than indicated for weed infestation, high opportunity for restoration, and no conflicts with other ICBEMP objectives. A more site-scale example might be a known, abandoned mine adit drainage that is leaching chemical contamination directly into the adjacent stream. Where these conditions are found, teams may recommend strategies for taking rapid intervention actions.

Example 5 ~ Project Opportunities in Existing Plans

In some situations, an existing plan may have identified project opportunities that match basin-level direction and priorities and are ready for implementation (for example, where recovery area objectives were established for threatened or endangered species and needed actions have been identified). Recommendations could link these actions to the basin findings, help prioritize the actions, and suggest strategies for ensuring compatibility with conditional and process direction in the ICBEMP Record of Decision.

B. Data and Assessment Gaps

Example 6 ~ Data Gap

Ten percent of the streams (watersheds) in a review area are found to be on the 303(d) list. Through professional judgement, it is hypothesized that another 20 percent of the remaining streams

(watersheds) are in a similar condition as the listed streams. Data would be needed to confirm the hypothesis. Recommendations for filling such data gaps would address the need for the information, strategies and priorities for acquiring it, and possible precautions about taking certain types of actions in the area prior to gathering and analyzing the data.

Example 7 ~ Further Mid-scale Assessment Needs

Initial characterization and assessment of status, risks, and opportunities in the review area may provide the impetus and create information bases for other planning and analysis processes, such as land use plan amendments, endangered species consultations or recovery plans, and water quality restoration planning. Teams may recommend further mid-scale analysis (for example, more intensive analysis of species and habitat distributions and trends, connectivity, and functionality of the riparian network) to provide the information necessary to support these other processes.

C. Implications for Initiating a Planning Process

Example 8 ~ Potential Conflicts Among ICBEMP Objectives

Based on mid-scale information, a subunit lights up as a good candidate for forest health restoration because of the extent and condition of dry, moist, and cold forest. It is also a good candidate for conservation and restoration of aquatic resources because of the presence and condition of aquatic core areas. These findings, and the ICBEMP direction associated with them, reveal a potential for conflict in subsequent planning for management activities. For example, the best solution for water quality limitations may be to close a system of roads, but these roads may be needed to carry out vegetation management designed to reduce risk of uncharacteristic fire. Teams may recommend initiation of a planning process to address the inherent conflicts, assess the trade-offs, and explore opportunities for concurrent restoration where possible. These recommendations may also suggest further mid-scale analysis or EAWS to better distinguish and understand relevant processes, functions, risks, and opportunities as support for the planning process.

Example 9 ~ Potential Conflicts Between ICBEMP Conditional Direction and a Local Land Use Plan Allocation

Opportunities to aggressively restore forest health conditions by reducing susceptibility to wildfire, insects and disease, soil degradation, loss of native species, and other problems that threaten ecological integrity and social values may be identified during Subbasin Review. Direction in ICBEMP associated with such conditions (conditional direction) may be found to directly conflict with a strict conservation allocation (spatial direction) in a local land use plan. This situation would warrant recommendations to initiate a plan amendment or to incorporate the new science and direction into an ongoing plan revision process in order to meet planning, NEPA, and public involvement requirements for changing spatial allocations in response to assessment findings.

Step 5 ~ Writing the Report

The results and process of Ecosystem Review at the Subbasin Scale (Subbasin Review) should be documented in a report. The report should summarize the process the team used and should communicate the results of each section and step. Although the review is a stage-setting document and not an in-depth analysis, resource information is characterized, synthesized, and interpreted to support subsequent decision-making processes. As a communications tool, review reports need to be written for a variety of audiences and levels of technical background. The report should be easy to understand and follow: from the discussion on how the review was organized and prepared through clear explanation of the recommendations and priorities and the logic supporting their development. Inclusion of graphics, maps, and visuals usually are helpful in communicating a point or message.

Suggested Format for Subbasin Review Report

Executive Summary

Briefly describe the review area context, both relative to the broad context and to any finer-scale context included in the review. Summarize the four steps for conducting the review, and highlight the overall results and conclusions determined during the review.

Table of Contents

A table of contents can be helpful to provide an overview of the review package. It also sets up the reader for what to expect when reading the report.

Part 1 ~ Review Background

Briefly highlight what was done to prepare for the actual review, such as: identifying the objectives of the review; determining the structure, timeframes, team expertise, and collaborators; and compiling data and materials needed for the review.

Part 2 ~ Issues

Describe the key issues or driving elements in the review area. The report should identify and discuss the key broad-scale issues, findings, and decisions that were pertinent to the review area, and why, as well as the mid-scale issues specific to the review area. Other issues pertinent within the review area, but at scales finer than the subbasin scale, should be identified as issues to be addressed in subsequent analyses.

Part 3 ~ Mid-scale Character Description

Highlight the dominant processes and unique features operating within the review area, appropriate for the mid-scale. The important characteristics operating within the review area would be discussed within the context of the broad scale. Ideally, the report would include discussion of functional characteristics (such as the relationship between aquatic species and water quality and hydrologic conditions), including similarities and differences across the review area. This part should also include discussion of the relationship of multiple characteristics for the review area (such as relationships between aquatics, water quality, forest vegetation conditions, erosional hazards, and roading). Explain how ecological conditions (dominant processes and features) may have changed as a result of human influence and natural disturbances. Maps or graphics showing frequencies, distributions, or populations rather than single features can be very helpful to convey mid-scale information. This explanation will help identify and categorize mid-scale status, risks, and opportunities, both from a functional viewpoint and from an integrated viewpoint. A discussion of the status, risks, and opportunities should be included in Part 3, providing a logical link to Part 4 of the report.

Part 4 ~ Priorities and Recommendations

Synthesis of the information determined in the previous steps will lead to the development of recommendations for specific management attention. Such attention will usually be in the form of determining where and what types of management are needed to meet management objectives, where finer-scale analysis is needed (such as EAWS and roads analysis), where adjustments to existing land use plans may be implicated, where additional mid-scale information is needed to develop conclusive recommendations, or what other information may be needed to address the issues. Organization or ranking of the recommendations will facilitate progress in addressing the established priorities. A listing of the prioritized recommendations with an explanation of the reasons and assumptions for the recommendations would be included in Part 4 of the report.

This section of the report also should describe the process used to prioritize the subunits within the review area, including: how subdivisions were delineated; how they were ranked (including how their status, risks, and opportunities relative to key issues or components were factored in); a list of the assumptions made during the prioritization process; and the results of the collaborative process used to arrive at priorities for future action. The report should conclude with documentation of intergovernmental agreement on priorities including any commitments to pool resources, and some form of schedule of anticipated next steps within the review area (such as EAWS or project planning) in the short term (one to three years out).

Glossary

Broad-scale ~ A regional land area which may include all or parts of several states. Examples of broad-scale assessments are those that were conducted for the Interior Columbia Basin Ecosystem Management Project and the Northwest Forest Plan.

Collaboration ~ An open and interactive process whereby all entities work constructively together to address their collective needs. The collaborative process embodies the concept of partnership, a powerful relationship among people to achieve a mutually beneficial goal. A partner has a strong sense of ownership in the group product and shares the responsibility for the outcome of the effort. In achieving a shared vision, partners in collaboration can influence, and be influenced by, each other while retaining their respective decision-making authorities.

Fine-scale ~ A landscape area varying in size from a 6th-field HUC to a combination of 5th-field HUCs, approximately 10,000 to 100,000 acres; however, a particular fine-scale analysis may not follow hydrologic boundaries when other boundaries are more appropriate to address fine-scale issues. Ecosystem Analysis at the Watershed Scale (EAWS) occurs at this scale.

Integrate ~ A process of synthesizing (see synthesis) separate ecosystem elements to understand the whole system.

Issue ~ Issues can be derived from factors that prompt initiation of a particular Subbasin Review, including management programs, priorities, and potential projects; regulatory requirements; pertinent Basin-level findings; and concerns people have about the area. Issues also can be resource problems, concerns, or other local factors highlighted by collaborative partners or discovered in other steps of the review. The scope, intensity, and depth of the review depends on the important management and resource issues in the review area.

Mid-scale ~ An area varying in size from a U.S. Geological Survey 4th-field HUC to groups of 4th-field HUCs, approximately 500,000 to 5,000,000 acres; however, a particular mid-scale analysis may not follow hydrologic boundaries when other boundaries are more appropriate to address mid-scale issues. Subbasin Review is occurs this scale.

Opportunity ~ A relative (e.g. low/medium/high or numeric) estimate of the potential of a subdivision to respond favorably to actions that would meet objectives for restoring ecosystem health and contributing to the provision of goods and services, including the relative willingness of stakeholders and adjacent land owners to participate.

Review area ~ The land area being evaluated in a particular Subbasin Review. It is defined collaboratively with interagency and intergovernmental partners conducting the Subbasin Review. It is usually a U.S. Geological Survey 4th-field HUC or groups of 4th-field HUCs, approximately 500,000 to 5,000,000 acres; however, a particular review area may not follow hydrologic boundaries when collaborators agree other boundaries are more appropriate for a particular review.

Risk ~ A relative (e.g., low/medium/high or numeric) estimate of the likelihood that an event would lead to circumstances that adversely affect important resource values. The risks estimated are those associated with inherent ecosystem disturbance processes (such as insects, disease, and wildfire) and ongoing management activities (such as livestock grazing, road maintenance, and mining).

Stakeholder ~ A person or group who has an interest or share in an undertaking.

Subdivisions- ~ Tracts of land within a review area defined during Subbasin Review to facilitate description, aid finer-scale analysis, and prioritize future management activities within the review area. Watersheds or subwatersheds (10,000 to 100,000 acres) may be useful subdivisions; however, other boundaries may be appropriate that take into consideration such factors as precipitation zones, vegetation types, soil types, and social interactions.

Status ~ A relative (e.g., low/medium/high or numeric) rating assigned to specific indicator variables (either resource values or conditions) to describe the condition of the variable within a subdivision relative to historical conditions and, for prioritization purposes, relative to other subdivisions of a review area.

Synthesis ~ A process of integrating separate ecosystem elements and their relationships to understand the whole system.

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Ecosystem Review at the Subbasin Scale

(Subbasin Review) Appendices

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Appendix A - Using Key Broad-scale Findings in Mid-scale Issue Identification
Appendix B - Intergovernmental Collaboration
Appendix C - Intergovernmental Collaboration Template (A six-step process tool for design of a collaboration strategy.)
Appendix D - Tribal Relations, Rights, and Interests
Appendix E - Federal Advisory Committee Act (FACA) Materials
Appendix F - Building and Nurturing the Subbasin Review Team
Appendix G - Scaled Relationships - Linking Information at Various Scales
Appendix H - Links to ICBEMP ROD

Appendix A

Using Key Broad-scale Findings in Mid-scale Issue Identification

Successful implementation of the Interior Columbia Basin Ecosystem Management Project (ICBEMP) hinges on agencies' abilities to solve basin-wide problems using site-specific decisions. Many current problems are a result of: (1) making site-specific decisions based only on locally identified issues, and (2) our inability to recognize and respond to cumulative effects of these individual decisions. A key step in addressing this problem is to include the appropriate broad-scale findings from the ICBEMP in defining issues for Ecosystem Review at the Subbasin Scale.

Following is a list of broad-scale conditions in the interior Columbia River Basin documented in the ICBEMP *Scientific Assessment* (Quigley and Arbelbide 1997) and EIS. The list should be used as a starting point for identifying issues at the subbasin scale. Not all the elements on the list are applicable to a specific subbasin, but the relevant broad-scale conditions should be addressed in Ecosystem Review at the Subbasin Scale (Subbasin Review). It is expected that review teams will identify subbasin-level issues that were not addressed in the ICBEMP. These mid-scale issues should also be included in the Subbasin Review.

Rangelands

- Noxious weeds are spreading rapidly, and in some cases exponentially, on rangelands in every range cluster.
- Woody species encroachment by and/or increasing density of woody species (sagebrush, juniper, ponderosa pine, lodgepole pine, and Douglas-fir), especially on dry grasslands and cool shrublands, has reduced herbaceous understory and biodiversity.
- Cheatgrass has taken over many dry shrublands, increasing soil erosion and fire frequency and reducing biodiversity and wildlife habitat. Cheatgrass and other exotic plant infestations have simplified species composition, reduced biodiversity, changed species interactions and forage availability, and reduced the systems' ability to buffer against changes.
- Expansion of agricultural and urban areas on non-federal lands has reduced the extent of some rangeland potential vegetation groups, most notably dry grasslands, dry shrublands, and riparian areas. Changes in some of the remaining habitat patches and loss of native species diversity have contributed to a number of wildlife species declines, some to the point of special concern (such as sage grouse, Columbian sharp-tailed grouse, California bighorn sheep, pygmy rabbit, kit fox, and Washington ground squirrel).
- Increased fragmentation and loss of connectivity within and between blocks of habitat, especially in shrub steppe and riparian areas, have isolated some habitats and populations and reduced the ability of populations to move across the landscape, resulting in long-term loss of genetic interchange.
- Slow-to-recover rangelands (in general, rangelands that receive less than 12 inches of precipitation per year) are not recovering naturally at a pace that is acceptable to the general public, and are either highly susceptible to degradation or already dominated by cheatgrass and noxious weeds.

- Fire frequency has decreased in many locations resulting in an increase in conifer encroachment; an increase in tree density in formerly savanna-like stands of juniper and ponderosa pine; and increased density and/or coverage of big sagebrush and other shrubs, with an accompanying loss of herbaceous vegetation.

- Fire frequency has increased in some areas, particularly in dryer locations where exotic annual grasses have become established. Increased fire frequency has caused a loss of shrub cover and reduction in bunchgrasses.

Forests

- Interior ponderosa pine has decreased across its range with a significant decrease in old single story structure. The primary transitions were to interior Douglas-fir and grand fir/white fir.

- There has been a loss of the large tree component (live and dead) within roaded and harvested areas. This decrease affects terrestrial wildlife species that are closely associated with these old forest structures.
- Western larch has decreased across its range. The primary transitions were to interior Douglas-fir, lodgepole pine, or grand fir/white fir.

- Western white pine has decreased by 95 percent across its range. The primary transitions were to grand fir/white fir, western larch, and shrub/herb/tree regeneration.

- The whitebark pine/alpine larch potential vegetation type has decreased by 95 percent across its range, primarily through a transition into the whitebark pine cover type. Overall, however, the whitebark pine cover stand has also decreased, with compensating increases in Engelmann spruce/subalpine fir.

- Generally, mid-seral forest structures have increased in dry and moist forest potential vegetation groups (PVG), with a loss of large, scattered, and residual shade-intolerant tree components, and an increase in the density of smaller shade-tolerant diameter trees.

- There has been an increase in fragmentation and a loss of connectivity within and between blocks of late-seral, old forests, especially in lower elevation forests and riparian areas. This has isolated some animal habitats and populations and reduced the ability of populations to move across the landscape, resulting in a long-term loss of genetic interchange.

- Habitat for several forest carnivores and omnivores is in decline.

- Insects and diseases always existed in forests, but the size and intensity of their attacks has increased in recent years due to increased stand density.

- Dry forests have had an increase in fuel loading, duff depth, stand density, and a fuel ladder that can carry fire from the surface into the tree crowns. As a result wildfire intensity has increased.

- Noxious weeds are spreading rapidly, and in some cases exponentially, in most dry forest types.

Hydrology and Watershed Processes

- Management activities throughout watersheds in the project area have affected the quantity and quality of water, processes of sedimentation and erosion, and the production and distribution of organic material, thus affecting hydrologic conditions.

Source Habitat

- Source habitats for the majority of species in the basin declined strongly (>20 percent decline) from historical to current.
- The strongest declines were for species dependent on low-elevation, old-forest habitats, species dependent on combinations of rangeland or early-seral forests with late-seral forests, and species dependent on native grassland and open canopy sagebrush habitats (Wisdom et al., in press).
- Primary causes of decline in old-forest habitats and early-seral habitats are intensive timber harvest and large-scale fire exclusion.
- Primary causes for decline in native herbland, woodland, grassland, and sagebrush habitats are excessive livestock grazing, invasion of exotic plants, and conversion of land to agriculture, residential, and urban development. Altered fire regimes have also contributed to a decline in grassland and shrubland habitats.
- A variety of road-associated factors negatively affect habitats or populations of many species.
- Human interactions with wide-ranging carnivores are generally negative and large areas of the basin may not be used by wide-ranging carnivores because of this habitats for many riparian dependent terrestrial species, especially shrubland habitats have declined.
- Snag and down wood habitats in managed forested and riparian areas have declined.

Streams, Rivers, and Lakes

- Banks and beds of streams, rivers, and lakes have been altered. In general, the changes have been greatest for the larger streams, rivers, and lakes.
- Water quantity and flow rates have been locally affected.
- Many Forest Service and BLM administered streams are "water quality limited" as defined by the Clean Water Act. On Forest Service-administered lands, the primary water quality problems are sedimentation, turbidity, flow alteration, and elevated temperatures. On BLM-administered lands, sedimentation, turbidity, and elevated temperatures are the primary reasons for listing as water quality limited.
- Streams and rivers are highly variable across the project area, reflecting diverse physical settings and disturbance histories. Nevertheless, important aspects of fish habitat, such as pool frequency and large woody debris abundance, have decreased throughout much of the project area.

Riparian Areas and Wetlands

- The overall extent and continuity of riparian areas and wetlands has decreased.
- Riparian ecosystem function, determined by the amount and type of vegetation cover, has decreased in most subbasins within the project area.
- A majority of riparian areas on Forest Service and BLM-administered lands are either "not meeting objectives," "non-functioning," or "functioning at risk." However, the rate has slowed and a few areas show increases in riparian cover and large trees.

- Within riparian woodlands, the abundance of mid-seral vegetation has increased, whereas the abundance of late and early seral structural stages has decreased.
- Within riparian shrublands, there has been extensive spread of western juniper and introduction of exotic grasses and forbs.
- The frequency and extent of seasonal floodplain and wetland inundation has been altered by changes in flow regime, and by changes in channel morphology.
- There is an overall decrease in large trees and late seral vegetation in riparian areas.
- Riparian areas are important for about three quarters of the terrestrial wildlife species. Wildlife numbers have declined in proportion to the decline in riparian habitat conditions.

Fish

- The composition, distribution, and status of fishes within the planning area are substantially different than they were historically. Some native fishes have been eliminated from large portions of their historical ranges.
- Many native nongame fish are vulnerable because of their restricted distribution or fragile or unique habitats.
- Although several of the key salmonids are still broadly distributed (notably the cutthroat trouts and redband trout), declines in abundance, loss of life history patterns, local extinctions, and fragmentation and isolation in smaller blocks of high quality habitat are apparent.
- Wild chinook salmon and steelhead are near extinction in a major part of their remaining distribution.
- Core areas for rebuilding and maintaining biological diversity associated with native fishes still exist within the basin.

Air Quality

- The current condition of air quality in the project area is considered good, relative to other areas of the country.
- Wildfires significantly affect the air resources. Current wildfires produce higher levels of smoke emissions than historically. Within the project area, the current trend in prescribed fire use is expected to result in an increase of smoke emissions.

Human Uses and Values

- The planning area is sparsely populated and rural, especially in areas with a large amount of agency lands. Some rural areas are experiencing rapid population growth, especially those areas offering high quality recreation and scenery.

- Development for a growing human population is encroaching on previously undeveloped areas adjacent to lands administered by the Forest Service and BLM. New development can put stress on the political and physical infrastructure of rural communities, diminish habitat for some wildlife, and increase agency costs to manage fire to protect people and structures.

- Recreation is an important use of agency lands in the planning area in terms of economic value and amount of use. Most recreation use is tied to roads and accessible water bodies, though primitive and semi-primitive recreation is also important and becoming scarce relative to growing demand.

- Industries customarily served by agency land uses, such as logging, wood products manufacturing and livestock grazing, no longer dictate the economic prosperity of the region, but remain economically and culturally important in rural areas. The economic dependence of communities on these industries is highest in areas that are geographically isolated and offer few alternative employment opportunities.

- The public has invested substantial land and capital to develop road systems on agency lands, primarily to serve commodity uses. On forest lands, commercial timber harvest has financed 90 percent of the construction cost and 70 percent of maintenance cost. Recreation now accounts for 60 percent of the use. Trends in timber harvesting and new road management objectives make the cost of managing these road systems an issue of concern.

- For those counties that have benefitted from Federal sharing of gross receipts from commodity sales on agency lands, changing levels commodity outputs can affect county budgets.

- Agency social and economic policy has emphasized the goal of supporting rural communities, specifically promoting stability in those communities deemed dependent on agency timber harvest and processing. Even-flow of timber sales, timber sale bidding methods, timber export restrictions, and small business set-asides of timber sales have been the major policy tools on Forest Service-administered commercial forestlands. Regulation of grazing practices has been important on BLM-administered rangelands.

- The factors that appear to help make communities resilient to economic and social change include population size and growth rate, economic diversity, social and cultural attributes, amenity setting, and quality of life. The ability of agencies to improve community resiliency depends on the effectiveness of agency land uses and management strategies to positively influence these factors.

- Predictability in timber sale volume from agency lands has been increasingly difficult to achieve. Advancing knowledge of ecosystem processes, changing societal goals, and changing forest conditions has undermined conventional assumptions underlying the quantity and regularity of timber supply from agency lands.

- Lands now administered by the Forest Service and BLM make up the traditional homelands of affected American Indian Tribes. Land management actions and decisions on these lands affect the rights and/or interests of these tribes and their members.

- American Indian tribes in the Basin depend on lands and resources administered by the BLM and Forest Service for a myriad of needs and uses ranging from subsistence uses and economic purposes to religious and cultural purposes.

- Agency social and economic policy has emphasized the goal of supporting rural communities, including tribal communities. The ability of agencies to assist tribal members and tribal communities depends on the effectiveness of agency land uses and management strategies to positively consider and influence these factors (tribal employment, subsistence, treaty/reserved rights, spiritual, cultural/social purposes).

American Indian Rights and Interests

- There is low confidence and trust that American Indian rights and interests are considered when decisions are proposed and made for actions to be taken on BLM-or Forest Service-administered lands.
- American Indian values on Federal lands may be affected by proposed actions on forestlands and rangelands because of changes in vegetation structure, composition, and density; existing roads; and watershed conditions.
- Indian tribes do not feel that they are involved in the decision-making process commensurate with their legal status. They do not feel that government-to-government consultation is taking place.
- Culturally significant species such as anadromous fish and the habitat necessary to support healthy, sustainable, and harvestable populations constitute a major, but not the only, concern. American Indian people have concern for all factors that keep the ecosystem healthy.

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Appendix B

Intergovernmental Collaboration

Background

The ICBEMP is built on the premise that decisions will be implemented using a collaborative intergovernmental approach. The approach identified in the *Subbasin Review Guide* emphasizes the need for intergovernmental collaboration: to create an avenue for resolving issues that, while of concern at the broad scale, are better resolved at the local level. References describing involvement of intergovernmental partners will: provide early opportunities for participation, help set reasonable deadlines, provide for greater assurance that decisions will withstand legal challenges, and gain more sustainable activity levels. Collaborators are other federal, state, and tribal governments and local organizations.

What Is Intergovernmental Collaboration?

Intergovernmental collaboration describes the relationship between the five ICBEMP agencies and other federal, state, tribal, and local government officials. Shared understanding and commitment to action are the goal, and mutual or consensus agreement is considered appropriate.

Intergovernmental collaboration enables partners to achieve shared management goals across diverse ownerships and jurisdictions. It is the involvement of federal, state, tribal, and local government officials as partners. It recognizes the influence each partner has over the successful management of each other's lands and interests. Examples of when such collaborative involvement may be appropriate include: (1) when decisions affect or involve other federal jurisdictions or authorities; (2) when decisions affect or involve state, tribal, or local government jurisdictions or authorities; (3) when the rights and/or interests of state, tribal and/or local governments are affected by pending decisions; and (4) when the desire to pool resources or work cooperatively is necessary or desired.

Because intergovernmental collaboration begins at the earliest stages of planning and all parties would have had opportunities for direct involvement in the decision-making process, any disagreements should be minimal at the time of the decision. However, when shared agreement is sought but not achievable, the federal land manager retains authority and responsibility for lands under their jurisdiction, as a matter of law. The federal decision maker must document how issues were addressed or mitigated or explain why mitigation is not possible. Where this type of collaborative involvement of governmental partners is demonstrated and documented, the outcome is more likely to be ownership of and support for the resultant decision by the involved participants.

To ensure that public issues and concerns are identified and brought into the collaborative process, where an intergovernmental collaborative process exists, a public involvement process may parallel it. For example, Resource Advisory Councils may identify an issue which could be addressed in the intergovernmental forum. This ensures that all governmental officials are aware of respective constituent concerns and that resultant decisions are reached with full consideration of these concerns.

The following laws and policies support intergovernmental collaboration as described above:

- An *exemption from the Federal Advisory Committee Act* allows actions in support of intergovernmental communications where meetings are exclusively between federal officials and official representatives of state, tribal and local governments and for the purpose of exchanging views, information, or advice relating to the management or implementation of federal programs that explicitly or inherently share intergovernmental responsibilities or administration.

- *Executive Order 13084, Consultation and Coordination with Tribal Governments*, provides for regular and meaningful consultation and collaboration with Indian tribal governments in the development of regulations; reduces the imposition of unfunded mandates upon tribes; and streamlines the application process and increases the availability of fee waivers to Indian tribal governments.

- *Secretarial Order 3206 - American Indian Tribal Rights, Federal Trust Responsibilities, and the Endangered Species Act.* The order stipulates "whenever agency actions planned under the Act (ESA) may impact tribal trust resources, the exercise of tribal rights, or Indian lands, they shall consult with, and seek the participation of, the affected Indian tribes to the maximum extent practicable... including opportunities to participate in data collection, consensus seeking, and associated processes. For purposes of this Secretarial order, tribal trust resources are defined as those natural resources, either on or off Indian lands, retained by or reserved by or for Indian tribes through treaties, statutes, judicial decisions, and executive orders, which are protected by a fiduciary obligation on the part of the United States."

Appendix C

Intergovernmental Collaboration Template (A six-step process tool for design of a collaboration strategy.)

While the objective of subbasin collaboration focuses on intergovernmental partners and Resource Advisory Councils and/or Provincial Advisory Councils, it does not prohibit the collaborative involvement of other key stakeholders. Depending on the objective(s) for collaboration, land management agency decision-makers may determine it appropriate to also collaborate with these other key stakeholders, such as watershed-based citizen groups, adjacent landowners, permittees, and others.

The collaborative template is a non-prescriptive approach for strategic design of collaborative processes at the local level. Emphasis is placed on collaborative involvement of intergovernmental and FACA-free partners; however, it can be used as an approach with any critical stakeholder. By design, the template is adaptable depending on the partners involved, the goals and objectives of collaboration, the stage of the planning or decision-making process, and the situation, opportunity, or decision on which we wish to collaborate.

The template focuses on several key areas that can help teams develop and maintain a collaborative effort. The needs for each of these areas are listed below and should be considered by teams as they move forward with their reviews.

The Template

Process

It is critical to the success of collaboration that the team develop a strategy for working with intergovernmental partners collaboratively. Strategy design is more constructively focused when there is a process to guide the design efforts. Furthermore, stakeholder involvement becomes critical to the success of Subbasin Review rather than a hurdle that must be cleared. The template process provides a focus for a number of key elements of collaboration, including: objective-driven involvement, identification of key stakeholders, an eye toward mutual benefit, shared expectations, and an emphasis on relationships over the long term. Problems likely to occur with teams in the area of collaboration more often than not will relate back to a lack of focus on one or more of these elements. Examples of such problems include: not involving all the key players, unclear expectations, lack of participation, conflict between members, intended products incomplete. Those teams who strategize involvement of their partners (using the template or other tool), design a framework (options for level of involvement, options for meeting schedule), and then involve partners in the design of the final collaborative strategy will be better off. Teams should first focus on internal design of a collaborative framework reflecting predictions of external needs, followed by external involvement to flesh out the framework together with their partners to better reflect mutual needs/benefits.

Public Involvement Plan Beneficial

In some cases a parallel public involvement process is needed to ensure that non-FACA-exempted stakeholders have an opportunity to share in and understand the results of Subbasin Review. The review guidelines don't require or encourage broad public involvement during the Subbasin Review, placing emphasis on getting substantive intergovernmental involvement. However, the collaborative template does provide an option to develop and implement a public involvement strategy for Subbasin Review which would parallel the intergovernmental collaboration process. Teams must carefully weigh the merits and pitfalls of public involvement, remembering that the review process might be confusing. People may not understand the intent of their involvement in this particular process and the differences between these reviews and decision documents that require public involvement. If public involvement is used, timely completion of the reviews must be factored in to the review process.

Line Officer Commitment Invaluable

It is essential that teams conducting Subbasin Review have up-front line officer commitment to the objectives for collaboration, such as information sharing, prioritization of EAWS, and pooling of resources. Expectations of stakeholders and team members center on the identified objectives for collaboration. Work products and stakeholder/ agency benefits are also based upon accomplishing objectives. The surest way to design collaboration for failure is to identify objectives which the agencies do not support or intend to honor. The result of this type of failure will hurt the agencies in their long-term relationships with stakeholders far beyond any particular Subbasin Review.

In the case of tribal relations and involvement with the review process, the agency line officer is the appropriate government-to-government contact with tribal officials.

Flexibility and Accommodation Are Key

Collaboration, by definition, means a greater voice for stakeholders in design and implementation of the collaborative process itself. While Subbasin Review is "time bounded" and is described as a brief six-to-eight week process, it is also described as a highly collaborative process involving intergovernmental stakeholders. Agency personnel must find creative ways to accommodate federal, state, tribal, and local entities so they can participate meaningfully. This may mean expanding the timeframe for accomplishing the review or finding other mechanisms of involvement for particular partners when there is less flexibility in the timeframe. Agency personnel must come to view intergovernmental collaboration as critical to accomplishment of the review.

Interest-based vs. Position-based Involvement

The template process forces an objective-driven collaborative strategy. This type of strategy focuses the involved parties on accomplishing objectives that each party agrees are mutually beneficial (identification of possible management actions, or the need to protect, restore or enhance resources) rather than fighting for their particular position. While stakeholders will still bring their individual issues to the table, they are examined in the context of how they contribute to the overall objectives of Subbasin Review rather than each individual objective in and of themselves.

Appendix D

Tribal Relations, Rights, and Interests

Background on Tribal Relations, Rights, and Interests

There are 22 federally recognized tribal governments potentially affected by the ICBEMP. Each of these tribes has interests in the lands and resources within the basin, and some have rights reserved through treaty or executive order which are integrally associated with BLM- and Forest Service-administered lands. The Forest Service and BLM, as agencies of the federal government, are required to manage the land under their stewardship with full consideration of the federal trust responsibility and these tribal rights and interests, particularly reserved rights where they exist.

The following is offered as an abbreviated overview to assist consultation efforts. As consultations occur with tribal governments, further information may be needed to fully clarify the relationship and needs for a specific subbasin review. Agency personnel should review the EIS for greater information on this subject. Further, it is expected that agency offices should already have established working relationships that can be used at the bridge for Subbasin Reviews.

- The federal trust responsibility applies to every federally recognized tribe regardless of whether it is a treaty tribe or whether reserved rights exist. While the federal trust responsibility has not been explicitly defined for agencies other than the Bureau of Indian Affairs, agencies are to place emphasis on government-to-government consultation with affected tribal governments, to ascertain the rights and/or interests of these tribes, and to consider and address these in analysis and decision making processes. This obviously includes the Subbasin Review process and objectives.

- Article VI of the U.S. Constitution states that the Constitution, federal laws, and treaties are the "Supreme Law of the Land." As such, where ratified treaties exist, they are of utmost importance in considering and responding to the rights and interests of respective tribes.

- Agency personnel should be aware of whether reserved rights exist, not so that they can try to interpret the rights or treaty itself, but so they can better understand what uses and resources are associated with these rights and thereby provide for their consideration and address them.

- Off-reservation rights of American Indian tribes are typically associated with "open and unclaimed lands" or "unoccupied lands." These areas often involve lands now administered by the BLM or Forest Service.

- If not mitigated through consultation with the affected tribe(s) prior to the exchange or disposal of BLM- or Forest Service-administered lands, treaty or reserved rights occurring on these federal lands would be extinguishable upon land disposal or other adjustment. Conversely, where resources associated with these reserved rights exist on lands coming into federal ownership, the reserved rights could then be

applicable to these incoming lands. "Usual and accustomed grounds and stations" refers specifically to the unique rights associated with fishing. Those tribes with off-reservation rights to take fish at usual and accustomed places have a right that persists on the land regardless of land ownership status. An understanding of these rights and the implications of land tenure adjustments emphasizes the critical need for early consultation with affected tribes.

- Reserved rights often reference the following types of uses: fishing, hunting, gathering, pasturing of horses and cattle, erecting structures for curing, and an implied reservation of water.

- Federally recognized Tribes are referred to as domestic dependent sovereign nations. They have distinct powers of government and governmental bodies. Elected tribal officials represent the tribe(s) and conduct the business of the tribe(s).

- As sovereign nations, with distinct rights, agency personnel should treat tribal officials with the respect and protocol afforded governmental officials.

- Consultation should be substantive and seek to understand and be responsive to tribal rights, interests and concerns.

Tribally Identified Basin-wide Issues

There are 22 federally recognized tribal governments potentially affected by the ICBEMP. Each of these tribes is a unique and sovereign entity. Individual tribes provided issues and concerns as it relates to their rights and/or interest. While many of these issues were specific and applicable only to an individual tribe, others were commonly held by the majority of involved tribes. These eight issues represent those commonly held tribal issues and concerns.

1. Harvestability - Tribes want to ensure that resources and species important to the rights and interests of tribes are available in sufficient quantities so that they can harvest them and meaningfully exercise their reserved rights, where these rights exist.

2. Develop a common understanding of the federal government's trust responsibility, including land management which protects resources reserved by treaties or executive orders.

3. Provide basin-wide habitat objectives and standards that will ensure protection and/or restoration of anadromous fish, freshwater fish, wildlife, and plant species.

4. Commit to monitoring and accountability protocols on which preventive and/or restorative actions can be initiated and/or adapted. Identify how tribes will know whether the federal government is keeping its commitments.

5. Consultation/Collaboration: Identify a streamlined, meaningful, and feasible consultation process that results in a resolution of the issues.

6. Implementation Funding: Identify how protection and restoration as defined in ICBEMP will be accomplished given less than full funding.

7. Provide for interagency and intergovernmental coordination and collaboration and ensure consistency with federal trust responsibilities and reserved rights as defined through treaty or executive order.

8. Tribal economics and unemployment: Tribes and tribal communities depend on Forest Service- and BLM-administered lands for economic as well as cultural, subsistence, religious, and treaty purposes. Tribes also depend on federal employment (firefighting, contracting, federal jobs) and want employment or contracting opportunities to be made available in which they can participate.

Subbasin Review Considerations

A number of examples are provided in Volume 2 of this guide. While none specifically deal with resources as they relate to the rights and interests of tribes, the examples could easily be adapted to include this sort of discussion and consideration. For example, where "uses" are included in matrices, treaty and subsistence uses could readily be added; where historical-to-current trends are reflected, their relationship to tribes could be added.

There are many areas for which characterization and prioritization could assist in addressing tribal rights and interests. The following are ideas on what some of them might be, recognizing this is not all inclusive and that depending on which tribe(s) are being consulted, there may be more or less emphasis placed on these items. It is hoped that tribal consultation will provide additions and/or emphasis to this list.

Treaty and subsistence uses and possible resources associated with those uses:

- Hunting
- Fishing
- Trapping
  -fur-bearing animals (beaver, otter, ermine/weasel, etc.)
- Grazing
- Gathering
  -medicinal plants
  -craft materials — plants for dyes and weaving, clay, flint, feathers, horns, etc.
  -food plants - camas or biscuitroot, Indian licorice, beargrass, mint, mushrooms, berries, etc.
  -building materials- tepee poles, dugout canoes, totems, sweat lodges, longhouse.
  -religious materials - sweetgrass, sage, eagle feathers and parts, etc.
  -firewood
- Erecting structures for curing
  -curing materials - willows, aspens, sagebrush, cedar, etc.

Traditional cultural properties - places specific and important to maintaining a tribe's cultural identity:

- Trails, vision quest sites, traditional camping or curing or flintknapping sites, gathering areas, fishing and hunting areas, etc.

Analysis Focus

Tribal interests, like all the other functional concerns evaluated in a Subbasin Review, need to focus on issues that are significant at the subbasin scale. It would be appropriate to characterize such issues as culturally important animal or plant species that have seriously depressed trends, or traditional uses that have been adversely affected or that conflict with on-going management activities (special use gathering, for example) or historical trails like the Nee-Mee-Poo Trail, while other site-specific tribal issues may not be appropriately dealt with at this scale.

Some of the concerns will be appropriate at multiple step-down analysis scales, while others are better managed at lower scales such as for EAWS or site-specific projects. It is important that agency leaders consult with tribal leaders to focus on issues appropriate to the subbasin scale and then have teams work with designated tribal representatives to characterize these issues and concerns for use in the subbasin recommendations process. Detailed information on vision quest sites or other small sites such a flintknapping or gathering areas may not be critical at this scale, but it is important that team members identify further step-down analysis needed and see that this important site information is highlighted when further analysis is done. Specific areas of analysis appropriate at the subbasin scale include but should not necessarily be limited to the following investigations:

- Trend (historical to current) of habitat for tribal species of interest.
- Identification of where species important to tribes are no longer present.
- Opportunities to re-establish these culturally significant species.
- Effects of loss of these species on tribal social and cultural values.
  (Example: " The Nez Perce Tribe has not been able to exercise their reserved right to fish, related to chinook salmon, since 19__ due to [describe what has affected the fishery/fish habitat and/or population]." Or "Remaining habitat for_____ is critical to maintaining species important to the Nez Perce and Shoshone-Bannock Tribes and it is recommended that...")

Appendix E

Federal Advisory Committee Act (FACA) Materials

FACA Considerations

Answering **Yes** to any or all of these questions indicates that the meeting is more likely to come under FACA; however, a yes answer alone does not necessarily equate to a violation of FACA. FACA considerations involve the totality of the circumstances.

1. Is it a group?
2. Did we, the agency, establish (select) the group?
3. Are we utilizing the group as a preferred source for advice or recommendations?
4. Are we, the agency, asking the group to provide consensus advice or recommendations?

FACA Exemptions

1. *Meetings with individuals:*
   Individuals, acting as individuals and not representatives of a larger group, are exempted from FACA.

2. *Meetings with pre-existing external groups:*
   FACA doesn't apply when a group makes an unsolicited request to provide their views to a federal agency; an agency may initiate the meeting when the government has not encouraged, promoted, funded, or otherwise controlled the creation and/or activities of the group being consulted.

3. *Meetings with a group of individuals:*
   FACA doesn't apply if the purpose is to obtain individual opinions rather than the advisory recommendation as a group; examples include focus groups, forums, or round tables to obtain the views of individual attendees. However, such a group may be covered by the Act if it is relied upon as a *de facto* advisory committee.

4. *Public meetings:*
   Public or town meetings which are open to all interested parties for the purpose of exchanging views and information are not subject to FACA.

5. *Meetings involving all full-time federal officers and employees:*
   FACA regulates the way federal officials obtain advice and recommendations from non-federal persons and is not applicable to meetings involving all federal personnel.

6. *State, local, and tribal government:*
   A. In general, each agency shall, to the extent permitted in law, develop an effective process to permit elected officers of state, local, and tribal governments (or their designated employees with authority to act on their behalf) to provide meaningful and timely input in the development of regulatory proposals containing significant federal intergovernmental mandates.

   B. Meetings between state, local, tribal and federal officers - The Federal Advisory Committee Act (5 U.S.C. A.P.) does not apply to actions in support of intergovernmental communications where:

      1. Meetings are held exclusively between federal officials and elected officers of state, local, and tribal governments (or their designated employees with authority to act on their behalf), acting in their official capacities; and
      2. Such meetings are solely for the purposes of exchanging views, information, or advice relating to the management or implementation of federal programs established pursuant to public law that explicitly or inherently share intergovernmental responsibilities or administration.

FACA and Interdisciplinary Team Selection

An interdisciplinary team consists of whatever combination of Forest Service staff and other federal government personnel are necessary to provide the necessary analytical skills. The team is limited to a manageable number of persons, although others may aid or support the interdisciplinary team as determined to be necessary by the responsible official. This participation must be consistent with the Federal Advisory Committee Act of 1972. Additionally, the National Environmental Policy Act (NEPA) defines interdisciplinary team membership in terms of federal employee membership.

Groups Subject to FACA

- Negotiated rulemaking committees
- Existing Advisory Committees
- Regional Interagency Executive Committee (RIEC)
- Provincial Interagency Executive Committees (PIEC)
- Adaptive Management Area Teams (AMAT)
- Watershed Analysis Groups/Late Successional Reserve Assessment Teams (like AMATs)
- Regional Community Economic Revitalization Team (R-CERT) - similar to RIEC
- State Community Economic Revitalization Team (State-CERT) - like AMATs

Intergovernmental Collaboration is a Parallel Process to Public Participation

Public participation can be viewed as a continuum. The greater the involvement, the less control retained by the agency, until at its greatest extent the agency delegates its decision-making authority. This is what FACA was created to prevent. So while collaboration means a more open decision-making process, agency officials must retain the ultimate decision.

Appendix F

Building and Nurturing the Subbasin Review Team

Team Makeup/Dynamics

- Ensure you have a good mix of skills on the core team. Considering the particular review area and the preliminary issues of which you are already aware, what expertise do you need on the team? Additionally, we suggest that you either identify someone on the team to function as a collaboration leader, or that you have a team expert (public affairs, tribal liaison, economist, or sociologist expertise) to focus these efforts and ensure all the necessary players are not only invited, but that their participation is actively sought. This person or this role would also be responsible for evaluating the six-step collaboration template.

- We recommend that the team identify and use a facilitator and a note taker. While team members can play a dual role, it is difficult to lead as well as facilitate and/or record a meeting.

- The team should take some time in their initial meeting to identify and agree on some ground rules. These rules would cover not only member roles and how members will treat one another, but also how information will be shared, how disagreements will be handled within the team, what the objectives and/or goals for Subbasin Review are, and other topics.

- The team should also set the context for their work together by coming to a common understanding of the review area. If issues are to be the driver, then the team should not only brainstorm issues but also validate them as a group. They should generally agree on the characterization of the subbasin, as well, before they embark upon other tasks such as prioritizing EAWS or suggesting possible types or suites of management actions where resources could be pooled.

- The core team should also ensure they have a shared vision of what the Subbasin Review process is and what they are hoping to accomplish (general idea of products, timeframes, prework, decision points and involvement at those points), and then they can expand that by working with those partners outside the core team to gain their shared understanding and commitment. While Subbasin Review is defined as a brief process, clearly it may take longer than four to eight weeks depending on the complexity of the resource issues. Furthermore, this time will not always run consecutively but may be several weeks of time committed over a six-month period.

- Acknowledge that some preconceptions and misunderstandings exist for everyone (between agencies, between federal, state, tribal, and local governments) from past interactions with one another. Get past it and decide, as a team, how the relationship should be. Define your concept of collaboration in the ground rules, and make a personal commitment not only to achieve the goals of the Subbasin Review, but also to enhance the intergovernmental relationships. Ultimately, the relationships will continue to bear fruit long after this prototype has ended.

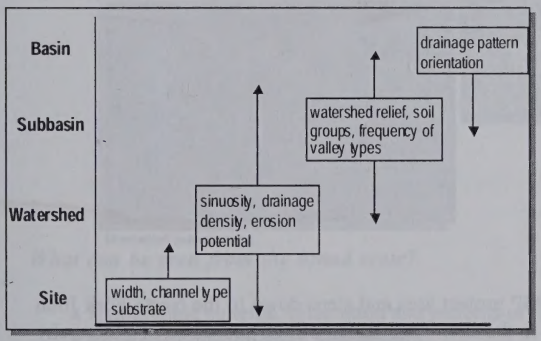
Appendix G

Scaled Relationships — Linking Information at Various Scales

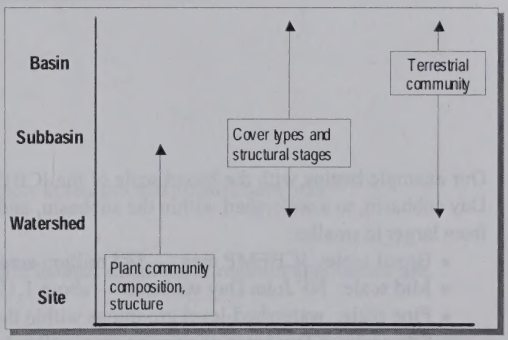
Introduction to Scales

How can we use broad-scale findings and management direction to address fine-scale questions? Why do we need information beyond project specifics? Context. The absence of context is like having a word with no sentence; there is nothing to help explain the meaning of the word or what message is being conveyed.

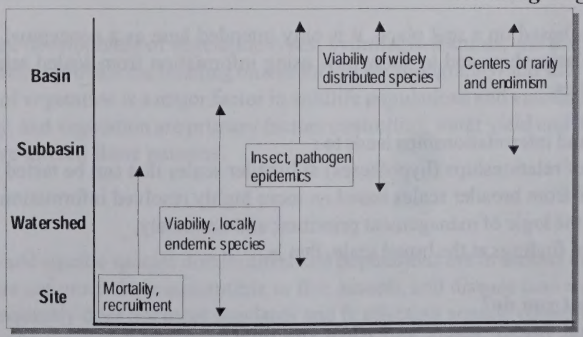
Information, or attributes, visible at one scale may disappear at another scale. Influences at broader scales generally operate over a longer timeframe than finer scales; setting limits on ecosystem machinery operating at finer scales. Fine-scale machinery is the gears, rods, and pistons, more or less invisible at broader scales, that makes the ecosystem tick. The machinery at one scale is the context or constraint at the next scale down.



Physical Attributes

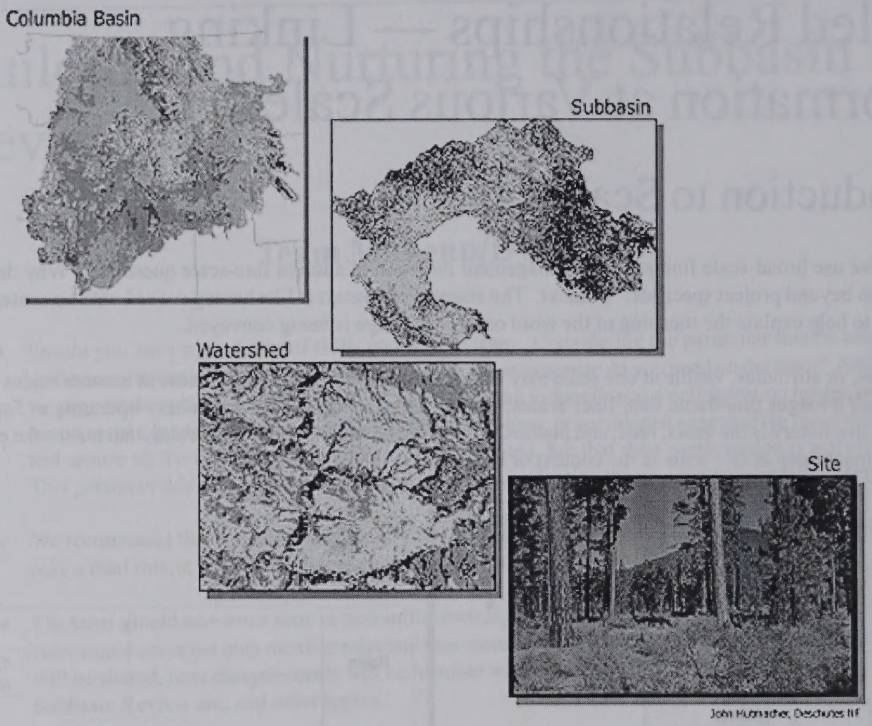


Existing Vegetation



Biological Attributes

Four Scales to Consider



Our example begins with the broad scale of the ICBEMP project area and steps down to the North Fork John Day subbasin, to a watershed within the subbasin, and to the site. Four scales will be addressed in a hierarchy from larger to smaller:

- Broad scale: ICBEMP area — 144 million acres, about the size of France
- Mid scale: NF John Day subbasin — about 1,171,000 acres
- Fine scale: watershed-level groupings within the NF John Day — 10,000 -100,000 acres
- Site scale: a few acres of riparian area, valley bottom and upslope dry forest

Although the example is based on a real place, it is only intended here as a conceptual example to stimulate thinking about scaled relationships and to show how using information from scaled relationships can lead to successful project activities.

This inquiry of patterns and interrelationships leads to :

- an understanding of relationships (hypotheses) at broader scales that can be tested an finer scales;
- tests of hypotheses from broader scales based on more highly resolved information at finer scales;
- the ability to trace the logic of management priorities; and ultimately,
- project design from findings at the broad scale, that is,

Why do you do what you do?
Why do you do what you do where and when you do it?

Broad Scale

What can be seen from the broad scale?

- Topographic patterns, orientation and patterns of major drainages and aquatic networks.
- Patterns of precipitation, temperature.
- Patterns of lithology.
- Broad patterns and extent of vegetation types, wildlife habitat, disturbance regimes and human use.
- Changes in these over time.

Why is this important?

- Climate drives the development of vegetation types, hydrologic features, and disturbance regimes.
- Geological conditions provide the building blocks for terrain, topography, and soil.
- Extent and type of vegetation is a major factor in wildlife populations and viability.
- Climate, geology, and vegetation are primary factors controlling water yield and timing of runoff.
- Human uses have altered these patterns.

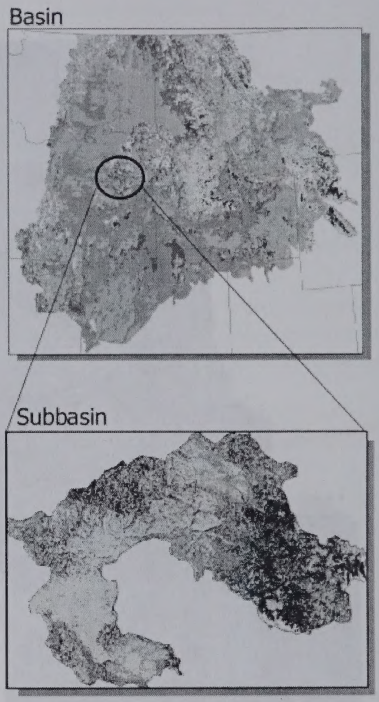
So what?

- Some terrestrial and aquatic species distributions and populations are in serious decline.
- Some forest types are much more susceptible to fire, insects, and disease than in the past.
- Water quality frequently does not meet standards and is affecting aquatic communities and human use.
- Uncharacteristically severe wildfire is much more likely in some areas than it was in the past.

Subbasin Scale

What can be seen from the subbasin scale?

- Higher elevation, cooler areas are likely cold water sources.
- Steep slopes in isolated areas.
- Sediment sources.
- Topographic shading.
- Geographic orientation of drainages.
- Some drainages are oriented to get maximum solar load.
- The fire frequency and severity have increased, especially in dry and moist forests.
- Insects and disease are increasing or at high levels in forests.
- Dry and moist forests have the highest departures from historical conditions in fire frequency and severity.
- Late and early seral stages of forests have declined and mid seral stages have increased.
- Rangeland vegetation is mostly altered from historical conditions, and noxious weed invasion is prominent.
- Soil degradation and sediment delivery to streams have increased.
- Water quality has changed. Water at the bottom of the basin is warmer and carries more sediment.
- Steelhead trout and bull trout populations have declined.



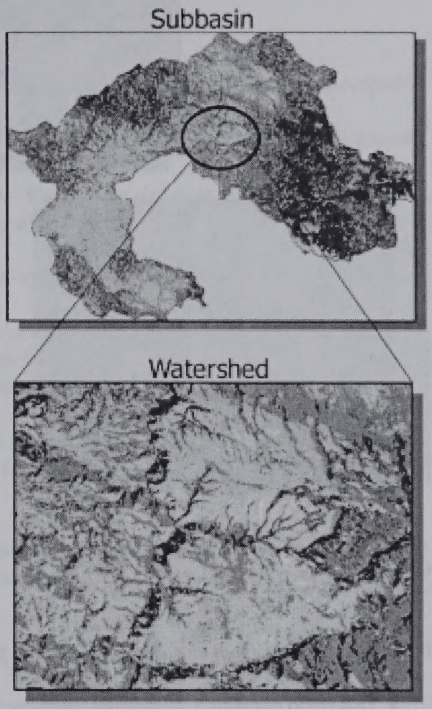
So what?

- Uncharacteristically intense fire threatens homes in rural areas, other uses of public lands, and low-resilient plant/animal species of concern.
- Waterbodies are listed under the Clean Water Act (CWA).
- Steelhead trout and bull trout are listed under the Endangered Species Act (ESA).
- Stronghold subwatersheds are indicated within the subbasin.
- Insects and disease will likely kill large numbers of trees in the coming decades.
- Terrestrial species dependent on late-successional forest, especially single-story forest, may become candidates for ESA listing.

Watershed Scale

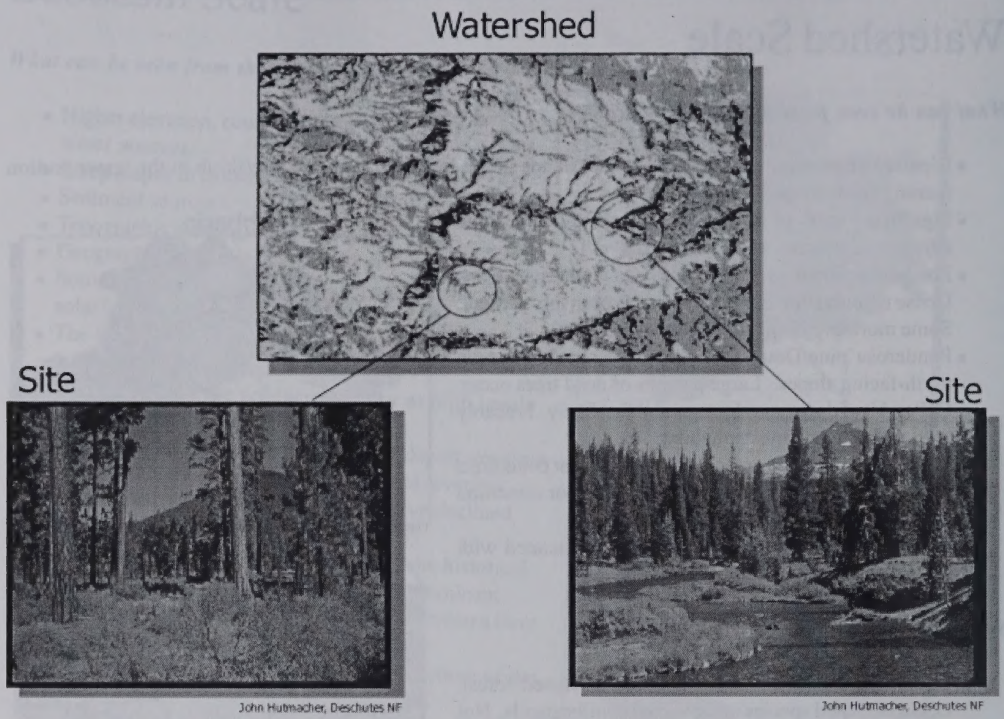
What can be seen from the watershed scale?

- Riparian vegetation types consist of grasslands in the lower portion and tree/shrub in the upper portion (aerial photo interpretation map).
- Significant areas of steep, open grassland occur, some adjacent to riparian area.
- Ponderosa pine-dominated stands occur on drier slopes. Dense regeneration of smaller trees is probably present. Some mortality is apparent in the larger pine.
- Ponderosa pine/Douglas-fir/grand fir stands exist on north-facing slopes. Large patches of dead trees occur. Quite a bit of down wood, snags, and fuel likely. Probably high quality cavity nester habitat.
- Valley types indicate potentially good habitat conditions in some areas. Some are likely to be in poor condition due to degraded riparian vegetation.
- Land types susceptible to erosion are associated with high elevation cold water sources.



So what?

- There is good cavity nester habitat for closed forest, LOS associated species in the mixed conifer stands. Not particularly abundant in the watershed.
- The riparian areas in the east-west trending areas might be degraded and could be contributing to elevated water temperatures. Might be good restoration candidates.
- The pine stands might experience increased stand-density-related mortality in the next decade. Fuel increases. Snag and down wood increases. Might be good candidates for a restoration thinning.
- Any restoration thinning in the moist and dry ponderosa pine forest will have to be carefully designed to prevent increased sediment loads that could threaten bull trout habitat. Short-term risk of some sediment versus long-term risk of fire and high levels of sediment and warm water.
- High elevation cold water sources with erosion susceptible soils will require protection from fire, if possible.



Site Scale

What can be seen from the site scale — dry ponderosa pine stand?

- This stand contains a substantial component of large, live ponderosa pine. It just barely qualifies as single story late-successional forest. Snags are not abundant, but are increasing with mortality. Many of the large ponderosa pine are subject to intense competition from smaller trees. Several have died recently, generating large snags.
- Pileated woodpeckers use the area where snags exist. Adjacent moist grand fir stands provide abundant habitat for them. White headed woodpeckers have been sighted, though the stand is marginal habitat for them at present.

So what?

- Large trees will continue to die as competition from the understory increases. Since the subbasin and watershed are below management goals for late-successional forest, additional large tree mortality that drops the stand below late-successional structure should be avoided if possible.
- White headed woodpecker habitat is in serious decline in the subbasin and watershed, while pileated woodpecker habitat is within acceptable bounds.
- Timber or prescribed fire activities should not increase sediment input to the adjacent stream, which is connecting habitat between bull trout populations.
- A prescribed fire and thinning-from-below management regime, taking care with timing and spatial location to avoid sediment to the stream, could move this stand to single story late-successional structure.

What can be seen from the site scale — riparian area?

- This riparian area is in good (properly functioning) condition.
- The availability of large wood for stream structure is not at desired levels.
- The stream is low in pool habitat and relatively structure-poor.
- Bull trout are present in good numbers.
- The surrounding lodgepole pine forest is mature and not currently experiencing insect attack.

So what?

- This aquatic stronghold should be protected. Erosion-sensitive upslope soils might produce unacceptable levels of sediment if fire or timber harvest occur.
- Riparian restoration could involve planting some conifers (Engelmann spruce or subalpine fir) to provide future large wood.
- Management other than fire protection is not needed now. Keep close watch on the lodgepole pine for unacceptable levels of insect activity and subsequent fuel build up.

What have we gained by considering the full multi-scale linking of context and information?

- We understand the relative importance and management priorities for the North Fork John Day River in the Basin and Blue Mountains. It is an important area for steelhead and bull trout habitat maintenance and restoration. Cold water sources do exist. Stronghold populations do exist. Fine-scale information has confirmed these hypotheses.
- There is a good opportunity to restore habitat for terrestrial species that depend on late-successional, single story dry forest. This subbasin has the potential, and in fact, the chosen watershed and stand currently harbor white headed woodpeckers.

The highest priorities in the watershed examined were to generate late-successional single story dry forest habitat — but not at the expense of sediment to the adjacent stream — and to protect a high-elevation cold water source area from near-term loss to fire or insects.

Appendix H

Links to ICBEMP ROD

[To be added to the final guide after the ROD has been issued.]